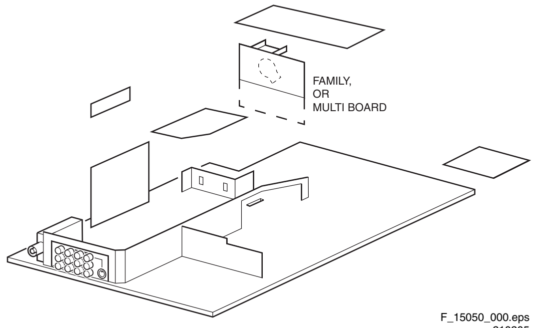
Colour Television

Chassis

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ServiceManual

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PHILIPS

1. Technical Specifications, Connections, and Chassis Overview

Index of this chapter:

1.1 Technical Specifications
1.2 Connections
1.3 Chassis Overview

Notes:

- Described specifications are valid for the *whole* product range.
- Figures below can deviate slightly from the actual situation, due to different set executions.

1.1 Technical Specifications

1.1.1 Reception

Display type	: CRT-DV-SF
Screen size	: 27”, 4:3
	: 29”, 4:3
	: 30”, 16:9
	: 32”, 16:9
Tuning system	: PLL
Color systems	: NTSC
Sound systems	: BTSC
Channel selections	: 181, full cable
IF picture carrier	: 45.75 MHz
Aerial input	: 75 ohm, F-type
A/V Connections	: NTSC M (3.58 - 4.5)

1.1.2 Miscellaneous

Audio output:	: 2 x 10 W
Power supply:	
- Mains voltage range	: 90 - 276 V_ac
- Mains frequency	: 50 / 60 Hz
Ambient conditions:	
- Temperature range	: +5 to +45 °C
- Maximum humidity	: 90% R.H.
Power consumption:	
- Normal operation	: from 119 W
	: to 133 W
- Standby	: < 1 W

1.2 Connections

Note: The following connector color abbreviations are used (acc. to DIN/IEC 757): Bk= Black, Bu= Blue, Gn= Green, Gy= Grey, Rd= Red, Wh= White, Ye= Yellow.

1.2.1 Top Control and Front / Side Connections

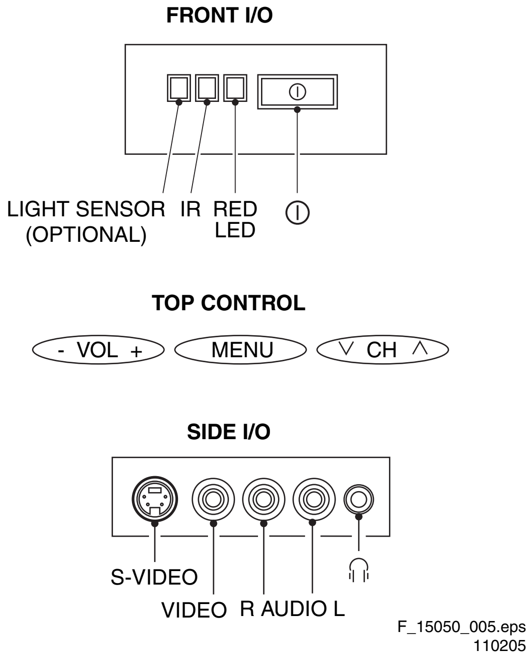


Figure 1-1 Top control and Front / Side connections

Hosiden: SVHS - In

1	- GND	Ground
2	- GND	Ground
3	- Y	1 Vpp / 75 ohm
4	- C	0.3 Vpp / 75 ohm

Audio / Video In

Ye	- Video (CVBS)	1 V_pp / 75 ohm
Wh	- Audio - L	0.2 V_rms / 10 kohm
Rd	- Audio - R	0.2 V_rms / 10 kohm
Bk	- Headphone	8 - 600 Ohm / 4 mW

1.2.2 Rear Connections

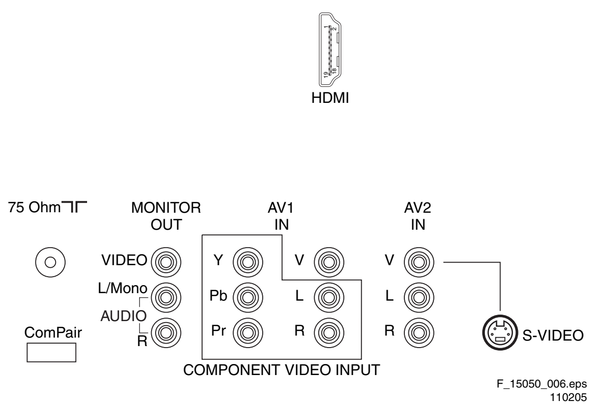


Figure 1-2 Rear connections

Aerial In

- F-type	Coax, 75 ohm

Monitor Out

Ye - Video (CVBS)	1 V_pp / 75 ohm
Wh - Audio - L	0.5 V_rms / 1 kohm
Rd - Audio - R	0.5 V_rms / 1 kohm

YUV In

Bu - U	0.7 V_pp / 75 ohm
Rd - V	0.7 V_pp / 75 ohm
Gn - Y	0.7 V_pp / 75 ohm

AV1 In

Ye - Video (CVBS)	1 V_pp / 75 ohm
Wh - Audio - L	0.5 V_rms / 10 kohm
Rd - Audio - R	0.5 V_rms / 10 kohm

AV2 In

Ye - Video (CVBS)	1 V_pp / 75 ohm
Wh - Audio - L	0.5 V_rms / 10 kohm
Rd - Audio - R	0.5 V_rms / 10 kohm

AV2 In (SVHS)

1	- Ground	GND
2	- Ground	GND
3	- Y	1 V_pp / 75 ohm
4	- C	0.3 V_pp / 75 ohm

1.3 Chassis Overview

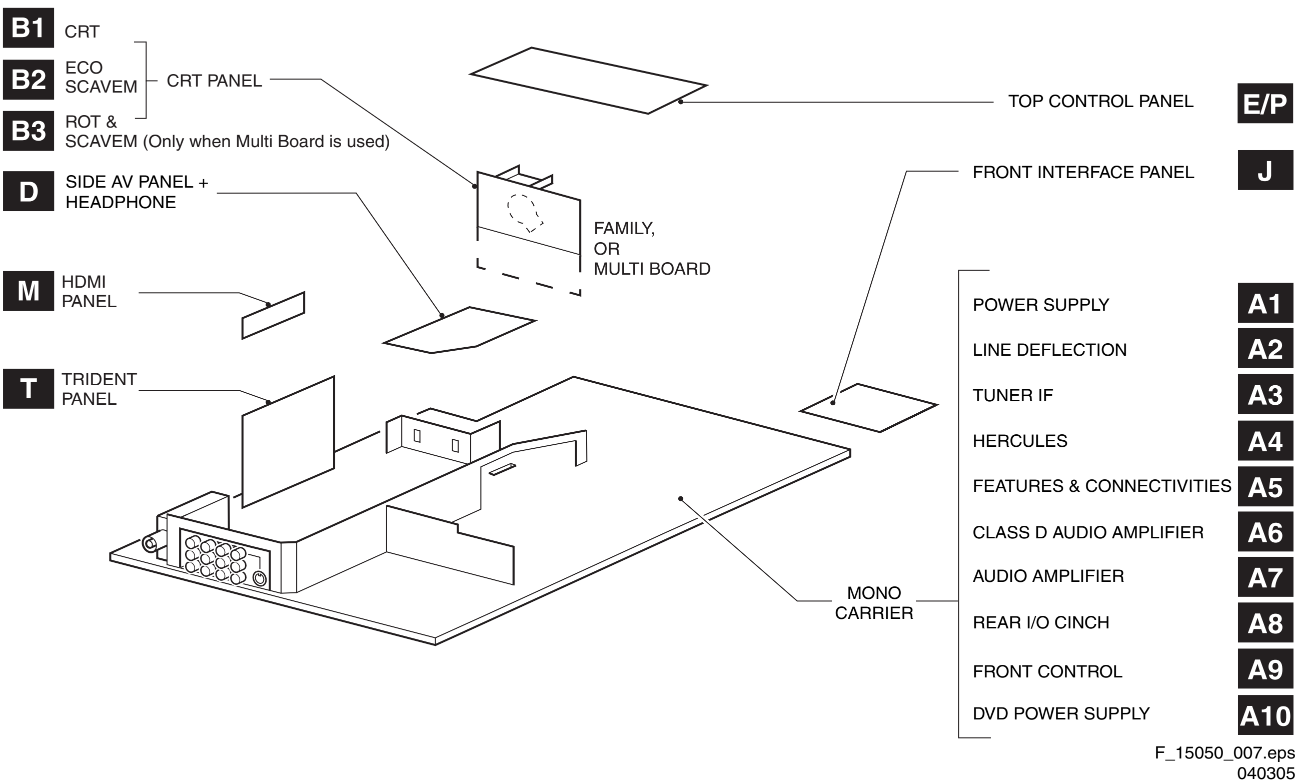


Figure 1-3 PWB location

2. Safety Instructions, Warnings, and Notes

Index of this chapter:

2.1 Safety Instructions
2.2 Warnings
2.3 Notes

2.1 Safety Instructions

Safety regulations require that **during** a repair:

- Connect the set to the Mains (AC Power) via an isolation transformer (> 800 VA).
- Replace safety components, indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the Mains (AC Power) lead for external damage.
- Check the strain relief of the Mains (AC Power) cord for proper function.
- Check the electrical DC resistance between the Mains (AC Power) plug and the secondary side (only for sets which have a Mains (AC Power) isolated power supply):
  1. Unplug the Mains (AC Power) cord and connect a wire between the two pins of the Mains (AC Power) plug.
  2. Set the Mains (AC Power) switch to the "on" position (keep the Mains (AC Power) cord unplugged!).
  3. Measure the resistance value between the pins of the Mains (AC Power) plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 Mohm and 12 Mohm.
  4. Switch "off" the set, and remove the wire between the two pins of the Mains (AC Power) plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD ⚠). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential. Available ESD protection equipment:
  – Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
  – Wristband tester 4822 344 13999.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⏚), or hot ground (⏚), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz for PAL, or 61.25 MHz for NTSC (channel 3).
- Where necessary, measure the waveforms and voltages with (⊓⊓) and without (⊓⊓) aerial signal. Measure the voltages in the power supply section both in normal operation (⏻) and in stand-by (⏻). These values are indicated by means of the appropriate symbols.
- The semiconductors indicated in the circuit diagram and in the parts lists, are interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.
- Manufactured under license from Dolby Laboratories. “Dolby”, “Pro Logic” and the “double-D symbol”, are trademarks of Dolby Laboratories.

2.3.2 Schematic Notes

- All resistor values are in ohms and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kohm).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 ohm).
- All capacitor values are given in micro-farads (μ= x10^{-6}), nano-farads (n= x10^{-9}), or pico-farads (p= x10^{-12}).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "asterisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Spare Parts List. Therefore, always check this list when there is any doubt.

2.3.3 Rework on BGA (Ball Grid Array) ICs

General
Although (LF)BGA assembly yields are very high, there may still be a requirement for component rework. By rework, we mean the process of removing the component from the PWB and replacing it with a new component. If an (LF)BGA is removed from a PWB, the solder balls of the component are deformed drastically so the removed (LF)BGA has to be discarded.

Device Removal
As is the case with any component that, it is essential when removing an (LF)BGA, the board, tracks, solder lands, or surrounding components are not damaged. To remove an (LF)BGA, the board must be uniformly heated to a temperature close to the reflow soldering temperature. A uniform temperature reduces the chance of warping the PWB.
To do this, we recommend that the board is heated until it is certain that all the joints are molten. Then carefully pull the component off the board with a vacuum nozzle. For the appropriate temperature profiles, see the IC data sheet.

Area Preparation
When the component has been removed, the vacant IC area must be cleaned before replacing the (LF)BGA.
Removing an IC often leaves varying amounts of solder on the mounting lands. This excessive solder can be removed with either a solder sucker or solder wick. The remaining flux can be removed with a brush and cleaning agent.
After the board is properly cleaned and inspected, apply flux on the solder lands and on the connection balls of the (LF)BGA.
Note: Do not apply solder paste, as this has shown to result in problems during re-soldering.

Device Replacement
The last step in the repair process is to solder the new component on the board. Ideally, the (LF)BGA should be aligned under a microscope or magnifying glass. If this is not possible, try to align the (LF)BGA with any board markers.
To reflow the solder, apply a temperature profile according to the *IC data sheet*. So as not to damage neighbouring components, it may be necessary to reduce some temperatures and times.

More Information
For more information on how to handle BGA devices, visit this URL: *www.atyourservice.ce.philips.com* (needs subscription, not available for all regions). After login, select “Magazine”, then go to “Workshop Information”. Here you will find Information on how to deal with BGA-ICs.

2.3.4 Lead Free Solder

Philips CE is going to produce lead-free sets (PBF) from 1.1.2005 onwards.

Figure 2-1 Lead-free logo

This sign normally has a diameter of 6 mm, but if there is less space on a board also 3 mm is possible.

Regardless of this logo (is not always present), one must treat all sets from this date onwards according to the following rules.

Due to lead-free technology some rules have to be respected by the workshop during a repair:
- Use only lead-free soldering tin Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able
  - To reach at least a solder-tip temperature of 400°C.
  - To stabilise the adjusted temperature at the solder-tip.
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C - 380°C is reached and stabilised at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips, switch “off” unused equipment or reduce heat.
- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly to avoid mixed regimes. If not to avoid, clean carefully the solder-joint from old tin and re-solder with new tin.
- Use only original spare-parts listed in the Service-Manuals. Not listed standard material (commodities) has to be purchased at external companies.
- Special information for lead-free BGA ICs: these ICs will be delivered in so-called "dry-packaging" to protect the IC against moisture. This packaging may only be opened short before it is used (soldered). Otherwise the body of the IC gets "wet" inside and during the heating time the structure of the IC will be destroyed due to high (steam-)pressure inside the body. If the packaging was opened before usage, the IC has to be heated up for some hours (around 90°C) for drying (think of ESD-protection!).
  Do not re-use BGAs at all!
- For sets produced before 1.1.2005, containing leaded soldering tin and components, all needed spare parts will be available till the end of the service period. For the repair of such sets nothing changes.

In case of doubt whether the board is lead-free or not (or with mixed technologies), you can use the following method:
- Always use the highest temperature to solder, when using SAC305 (see also instructions below).
- De-solder thoroughly (clean solder joints to avoid mix of two alloys).

Caution: For BGA-ICs, you **must** use the correct temperature-profile, which is coupled to the 12NC. For an overview of these profiles, visit the website *www.atyourservice.ce.philips.com* (needs subscription, but is not available for all regions)
You will find this and more technical information within the "Magazine", chapter "Workshop information".
For additional questions please contact your local repair help desk.

2.3.5 Practical Service Precautions

- **It makes sense to avoid exposure to electrical shock.** While some sources are expected to have a possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.
- **Always respect voltages**. While some may not be dangerous in themselves, they can cause unexpected reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

3. Directions for Use

You can download this information from the following websites:
http://www.philips.com/support
http://www.p4c.philips.com

4. Mechanical Instructions

Index of this chapter:
4.1 Set Disassembly
4.2 Service Position
4.3 Assy/Panel Removal
4.4 Set Re-assembly

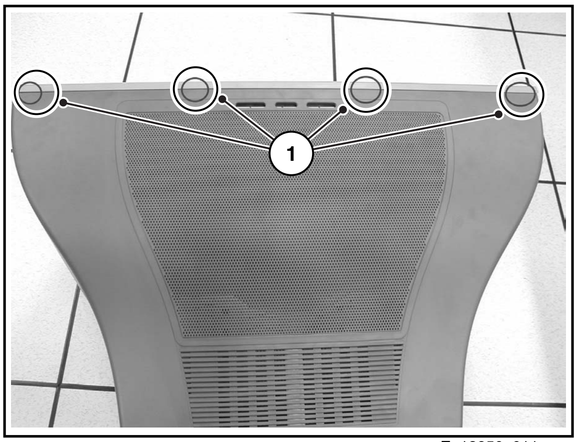
Note: Figures below can deviate slightly from the actual situation, due to different set executions.

4.1 Set Disassembly

Warning: Be sure to disconnect the AC power from the set before opening it.

4.1.1 Rear Cover

1. Remove all screws. If you do not remove them, you cannot access the clips.
2. Tilt the set a little forward, so that you can release the two clickfit clamps that are located at the bottomplate of the set.
3. Four openings (1) can be found at the top. The openings are very small (2).
   Note: Some sets only have the two inner openings.
4. Underneath every opening there is a clip. Push this clip down with a very thin piece of metal (3), until you hear a click.
   Caution: do **not** use a screwdriver, this will damage the cabinet.
5. When all four clips are pushed down, the back cover can be removed.



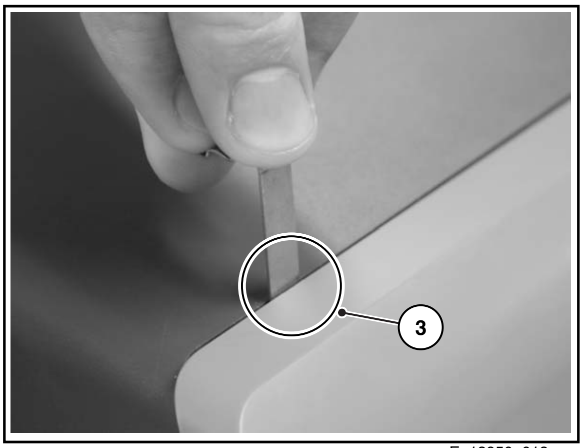
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Figure 4-1 Rear cover (for FL13 styling)



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Figure 4-2 Opening

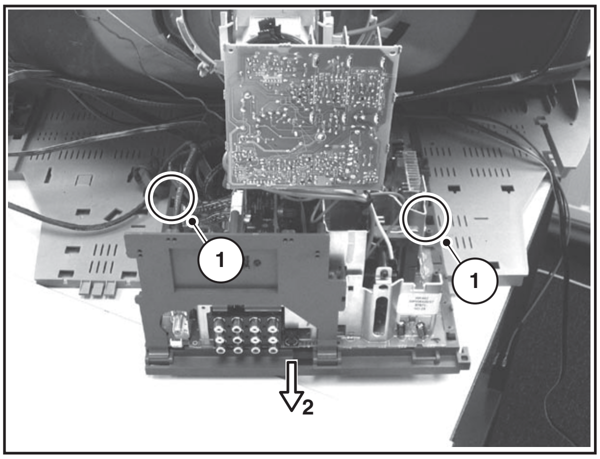


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Figure 4-3 Pushing clips down

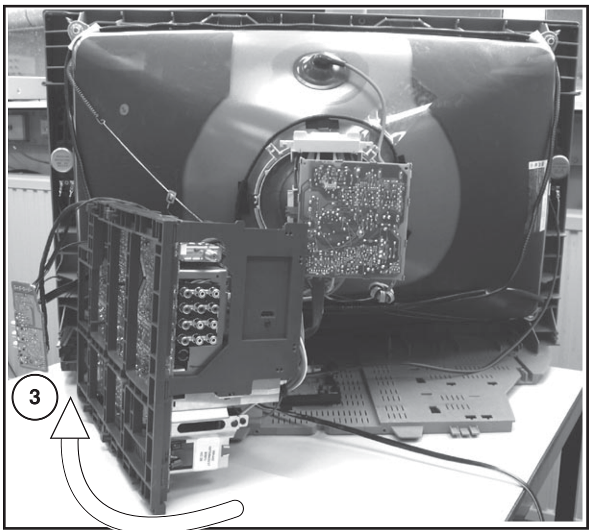
4.2 Service Position

Before placing the Mono Carrier in its service position, remove the Front Interface assy/panel (see paragraph "Front Interface Assy/Panel") and the Side AV assy/panel (see paragraph "Side AV Assy/Panel").



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Figure 4-4 Mono Carrier



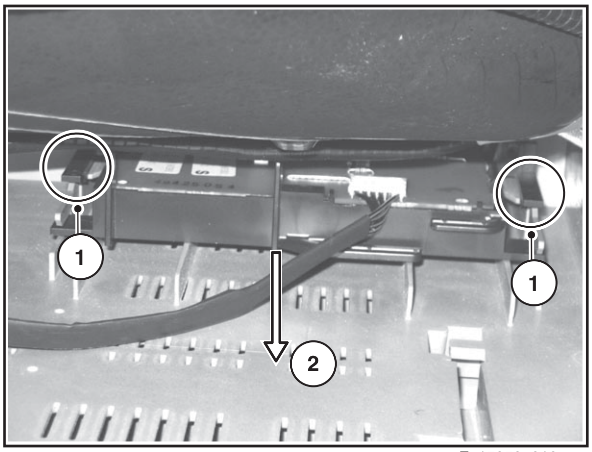
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Figure 4-5 Service position Mono Carrier

1. Disconnect the degaussing coil.
2. Release the two fixation clamps [1] (at the mid left and mid right side of the bracket), and remove the bracket from the bottom tray, by pulling it backwards [2].
3. Move the panel bracket somewhat to the left and flip it 90 degrees [3], with the components towards the CRT.
4. Turn the panel bracket with the rear I/O toward the CRT.

4.3 Assy/Panel Removal

4.3.1 Front Interface Assy/Panel



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Figure 4-6 Front interface assy/panel removal

1. Remove the two fixation screws.
2. Remove the complete module from the bottom plate, by pulling the two fixation clamps upward [1], while sliding the module away from the CRT [2].
3. Release the two fixation clamps at the side of the bracket, and lift the panel out of the bracket (it hinges at one side).

4.3.2 Side AV Assy/Panel

1. Remove the fixation screw, and remove the complete Side AV assembly.
2. Release the two fixation clamps, and lift the panel out of the bracket.

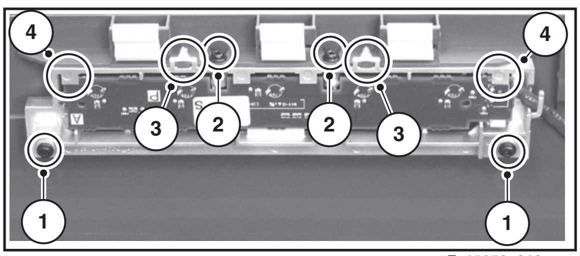
4.3.3 HDMI Interface Panel

To remove the HDMI Interface panel from the Mono Carrier, unscrew the fixation screw at the back of the assy.

4.3.4 Trident Panel

1. Remove all cables.
2. Pull the panel upwards out of the connectors.

4.3.5 Top Control Assy/Panel



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Figure 4-7 Top Control assy/panel removal

1. Remove the two fixation screws at the bottom [1] and the two fixation screws at the front of the assy [2].
2. Release the two fixation clamps [3] to lift out the assy.
3. Release the two fixation clamps [4] to lift the panel out of the assy.

4.4 Set Re-assembly

To re-assemble the whole set, do all processes in reverse order.

Note: before you mount the rear cover, perform the following checks:

- Check whether the AC power cord is mounted correctly in its guiding brackets.
- Check whether all cables are replaced in their original position

5. Service Modes, Error Codes, and Fault Finding

Index of this chapter:

5.1 Test Points
5.2 Service Modes
5.3 Problems and Solving Tips Related to CSM
5.4 ComPair
5.5 Error Codes
5.6 The Blinking LED Procedure
5.7 Protections
5.8 Fault Finding and Repair Tips

5.1 Test Points

This chassis is equipped with test points in the service printing. In the schematics test points are identified with a rectangle box around Fxxx or Ixxx. These test points are specifically mentioned in the “Test Point Overview” as “half moons” with a dot in the center.

Table 5-1 Test point overview

Test point	Circuit	Diagr.
F508, F535, F536, F537, F552, F561, F563, F573, F664, I513, I518, I519, I524, I531, I533, I546	Power supply	A1
F401, F412, F413, F414, F418, F452, F453, F455, F456, F458, F459, F460, F461, I408, I416, I417, I420, I462, I468	Line & Frame Deflection	A2
F003, F004, I001, I002	Tuner IF	A3
F201, F203, F205, F206	Hercules	A4
F240, F241, F242	Features & Connectivities	A5
F952, F955, I951, I952	Audio Amplifier	A7
F692	Front Control	A9
F331, F332, F333, F338, F339, F341, F351, F353, F354	CRT Panel	B1
F361, F362, F381, F382	ECO Scavem	B2

Perform measurements under the following conditions:
- Television set in Service Default Alignment Mode.
- Video input: Color bar signal.
- Audio input: 3 kHz left channel, 1 kHz right channel.

5.2 Service Modes

Service Default mode (SDM) and Service Alignment Mode (SAM) offers several features for the service technician, while the Customer Service Mode (CSM) is used for communication between the call center and the customer.

This chassis also offers the option of using ComPair, a hardware interface between a computer and the TV chassis. It offers the abilities of structured troubleshooting, error code reading, and software version readout for all chassis. *Minimum requirements for ComPair:* a Pentium processor, a Windows OS, and a CD-ROM drive (see also paragraph "ComPair").

5.2.1 Service Default Mode (SDM)

Purpose
- To create a predefined setting for measurements to be made.
- To override software protections.
- To start the blinking LED procedure.

Specifications
- Tuning frequency: 61.25 MHz (channel 3).
- Color system: NTSC M.
- All picture settings at 50% (brightness, color contrast, hue).
- Bass, treble and balance at 50 %; volume at 25 %.
- All service-unfriendly modes (if present) are disabled. The service unfriendly modes are:
  - Timer / Sleep timer.
  - Child / parental lock.
  - Blue mute.
  - Hotel / hospital mode.
  - Auto shut off (when no “IDENT” video signal is received for 15 minutes).
  - Skipping of non-favorite presets / channels.
  - Auto-storage of personal presets.
  - Auto user menu time-out.
  - Auto Volume Leveling (AVL).

How to enter
To enter SDM, use one of the following methods:
- Press the following key sequence on the remote control transmitter: “**062596**” directly followed by the MENU button (do not allow the display to time out between entries while keying the sequence).
- Short the jumper wire 9252 with a cold ground on the family board (for example the tuner casing) and apply AC power. Then press the power button (remove the short after start-up).
  Caution: Entering SDM by shorting wire 9252 with ground will override the +8V-protection. Do this only for a short period. When doing this, the service-technician must know exactly what he is doing, as it could damage the television set.
- Or via ComPair.

After entering SDM, the following screen is visible, with SDM in the upper right corner of the screen to indicate that the television is in Service Default Alignment Mode.

```
00028   L05US1  1.1  PUS1 0.7     SDM
ERR 0 0 0 0 0
OP 000 057 140 032 120 128 000
```

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Figure 5-1 SDM menu

How to navigate

Use one of the following methods:

- When you press the MENU button on the remote control, the set will switch on the normal user menu in the SDM mode.
- On the TV, press and hold the VOLUME DOWN and press the CHANNEL DOWN for a few seconds, to switch from SDM to SAM and reverse.

How to exit

Switch the set to STANDBY by pressing the POWER button on the remote control transmitter or the television set.
If you turn the television set off by removing the AC power (i.e., unplugging the television) without using the POWER button, the television set will remain in SDM when AC power is re-applied, and the error buffer is not cleared.

5.2.2 Service Alignment Mode (SAM)

Purpose

- To change option settings.
- To display / clear the error code buffer.
- To perform alignments.

Specifications

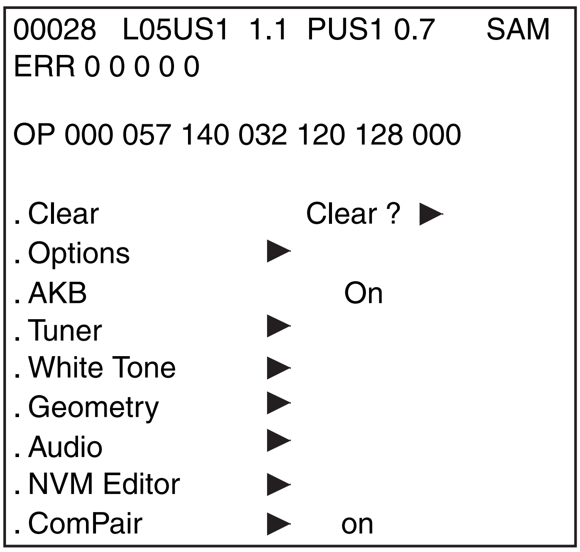
- Operation hours counter (maximum five digits displayed).
- Software version, Error codes, and Option settings display.
- Error buffer clearing.
- Option settings.
- AKB switching.
- Software alignments (Tuner, White Tone, Geometry & Audio).
- NVM Editor.
- ComPair Mode switching.

How to enter

To enter SAM, use one of the following methods:

- Press the following key sequence on the remote control transmitter: "**062596**" directly followed by the OSD/STATUS button (do not allow the display to time out between entries while keying the sequence).
- Or via ComPair.

After entering SAM, the following screen is visible, with SAM in the upper right corner of the screen to indicate that the television is in Service Alignment Mode.



F_15050_014.eps
110205

Figure 5-2 SAM menu

Menu explanation

1. **LLLLL.** This represents the run timer. The run timer counts normal operation hours, but does not count standby hours.
2. **AAABCD-x.y.** This is the software identification of the main microprocessor:
   – **A**= the project name (= L05).
   – **B**= the region: E= Europe, A= Asia Pacific, U= NAFTA, L= LATAM.
   – **C**= the software diversity:
     - **Europe:** T= 1 page TXT, F= Full TXT, V= Voice control.
     - **LATAM and NAFTA:** N= Stereo non-dBx, S= Stereo dBx.
     - **Asian Pacific:** T= TXT, N= non-TXT, C= NTSC.
     - **ALL regions:** M= mono, D= DVD, Q= Mk2.
   – **D**= the language cluster number.
   – **x**= the main software version number (updated with a major change that is incompatible with previous versions).
   – **y**= the sub software version number (updated with a minor change that is compatible with previous versions).
3. **EFFG-x.y.** This is the software identification of the Trident microprocessor.
   – **P**= indication of the Trident processor.
   – **FF**= the region: US=Nafta.
   – **G**= the language cluster number.
   – **x**= the main software version number (updated with a major change that is incompatible with previous versions).
   – **y**= the sub software version number (updated with a minor change that is compatible with previous versions).
4. **SAM.** Indication of the Service Alignment Mode.
5. **Error Buffer.** Shows all errors detected since the last time the buffer was erased. Five errors possible.
6. **Option Bytes.** Used to set the option bytes. See "Options" in the Alignments section for a detailed description. Seven codes are possible.
7. **Clear.** Erases the contents of the error buffer. Select the CLEAR menu item and press the MENU RIGHT key. The content of the error buffer is cleared.
8. **Options.** Used to set the option bits. See "Options" in the Alignments section for a detailed description.
9. **AKB.** Used to disable (Off) or enable (On) the "black current loop" (AKB= Auto Kine Bias).
10. **Tuner.** Used to align the tuner. See "Tuner" in the Alignments section for a detailed description.
11. **White Tone.** Used to align the white tone. See "White Tone" in the Alignments section for a detailed description.
12. **Geometry.** Used to align the geometry settings of the television. See "Geometry" in the Alignments section for a detailed description.
13. **Audio.** No audio alignment is necessary for this television set.
14. **NVM Editor.** Can be used to change the NVM data in the television set. See table "NVM data" further on.
15. **ComPair.** Can be used to switch on the television to In System Programming (ISP) mode, for software uploading via ComPair. **Caution:** When this mode is selected without ComPair connected, the TV will be blocked. Remove the AC power to reset the TV.

How to navigate

- In SAM, select menu items with the MENU UP/DOWN keys on the remote control transmitter. The selected item will be highlighted. When not all menu items fit on the screen, use the MENU UP/DOWN keys to display the next / previous menu items.
- With the MENU LEFT/RIGHT keys, it is possible to:
  – Activate the selected menu item.
  – Change the value of the selected menu item.
  – Activate the selected submenu.
- In SAM, when you press the MENU button twice, the set will switch to the normal user menus (with the SAM mode

still active in the background). To return to the SAM menu press the MENU or STATUS/EXIT button.

- When you press the MENU key in while in a submenu, you will return to the previous menu.

How to store SAM settings

To store the settings changed in SAM mode, leave the top level SAM menu by using the POWER button on the remote control transmitter or the television set.

How to exit

Switch the set to STANDBY by pressing the POWER button on the remote control transmitter or the television set.
If you turn the television set “off” by removing the AC power (i.e., unplugging the television) without using the POWER button, the television set will remain in SAM when AC power is re-applied, and the error buffer is not cleared.

5.2.3 Customer Service Mode (CSM)

Purpose

The Customer Service Mode shows error codes and information on the TV’s operation settings. The call center can instruct the customer (by telephone) to enter CSM in order to identify the status of the set. This helps the call center to diagnose problems and failures in the TV set before making a service call.
The CSM is a read-only mode; therefore, modifications are not possible in this mode.

How to enter

To enter CSM, press the following key sequence on the remote control transmitter: “**123654”** (do not allow the display to time out between entries while keying the sequence).

Upon entering the Customer Service Mode, the following screen will appear:

```
1 00028   L05US1  1.1  PUS1 0.7    CSM
2 CODES 0 0 0 0 0
3 OP 000 057 140 032 120 128 000
4 nnXXnnnn/nnX
5 P3C-1
6 NOT TUNED
7 NTSC
8 STEREO
9 CO 50 CL 50 BR 50 HU 0
0 AVL Off  BS 50
```

F_15050_015.eps
140205

Figure 5-3 CSM menu

Menu explanation

1. Indication of the decimal value of the operation hours counter, Software identification of the main and Trident microprocessor (see "Service Default or Alignment Mode" for an explanation), and the service mode (CSM= Customer Service Mode).
2. Displays the last five errors detected in the error code buffer.
3. Displays the option bytes.
4. Displays the type number version of the set.
5. Reserved item for P3C call centers.
6. Indicates the television is receiving an "IDENT" signal on the selected source. If no "IDENT" signal is detected, the display will read "NOT TUNED"
7. Displays the detected Color system (e.g. PAL/NTSC).
8. Displays the detected Audio (e.g. stereo/mono).
9. Displays the picture setting information.
10. Displays the sound setting information.

How to exit

To exit CSM, use one of the following methods:

- Press the MENU, STATUS/EXIT, or POWER button on the remote control transmitter.
- Press the POWER button on the television set.

5.3 Problems and Solving Tips Related to CSM

5.3.1 Picture Problems

Note: The problems described below are all related to the TV settings. The procedures used to change the value (or status) of the different settings are described.

Picture too dark or too bright

If:

- The picture improves when you have press the AUTO PICTURE button on the remote control transmitter, or
- The picture improves when you enter the Customer Service Mode,

Then:

1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys (if necessary) to select BRIGHTNESS.
6. Press the MENU LEFT/RIGHT keys to increase or decrease the BRIGHTNESS value.
7. Use the MENU UP/DOWN keys to select PICTURE.
8. Press the MENU LEFT/RIGHT keys to increase or decrease the PICTURE value.
9. Press the MENU button on the remote control transmitter twice to exit the user menu.
10. The new PERSONAL preference values are automatically stored.

White line around picture elements and text

If:

The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:

1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys to select SHARPNESS.
6. Press the MENU LEFT key to decrease the SHARPNESS value.

7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

Snowy picture

Check CSM line 6. If this line reads “Not Tuned”, check the following:

- Antenna not connected. Connect the antenna.
- No antenna signal or bad antenna signal. Connect a proper antenna signal.
- The tuner is faulty (in this case line 2, the Error Buffer line, will contain error number 10). Check the tuner and replace/ repair the tuner if necessary.

Black and white picture

If:

- The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:

1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys to select COLOR.
6. Press the MENU RIGHT key to increase the COLOR value.
7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

Menu text not sharp enough

If:

- The picture improves after you have pressed the AUTO PICTURE button on the remote control transmitter,

Then:

1. Press the AUTO PICTURE button on the remote control transmitter repeatedly (if necessary) to choose PERSONAL picture mode.
2. Press the MENU button on the remote control transmitter. This brings up the normal user menu.
3. In the normal user menu, use the MENU UP/DOWN keys to highlight the PICTURE sub menu.
4. Press the MENU LEFT/RIGHT keys to enter the PICTURE sub menu.
5. Use the MENU UP/DOWN keys to select PICTURE.
6. Press the MENU LEFT key to decrease the PICTURE value.
7. Press the MENU button on the remote control transmitter twice to exit the user menu.
8. The new PERSONAL preference value is automatically stored.

5.4 ComPair

5.4.1 Introduction

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the European DST (service remote control), which allows faster and more accurate diagnostics. ComPair has three big advantages:

- ComPair helps you to quickly get an understanding on how to repair the chassis in a short time by guiding you systematically through the repair procedures.
- ComPair allows very detailed diagnostics (on I2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I2C commands yourself because ComPair takes care of this.
- ComPair speeds up the repair time since it can automatically communicate with the chassis (when the microprocessor is working) and all repair information is directly available. When ComPair is installed together with the Force/SearchMan electronic manual of the defective chassis, schematics and PWBs are only a mouse click away.

5.4.2 Specifications

ComPair consists of a Windows based fault finding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial (or RS232) cable.
For this chassis, the ComPair interface box and the TV communicate via a bi-directional service cable via the service connector(s).

The ComPair fault finding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in two ways:

- Automatic (by communication with the television): ComPair can automatically read out the contents of the entire error buffer. Diagnosis is done on I2C/UART level. ComPair can access the I2C/UART bus of the television. ComPair can send and receive I2C/UART commands to the micro controller of the television. In this way, it is possible for ComPair to communicate (read and write) to devices on the I2C/UART buses of the TV-set.
- Manually (by asking questions to you): Automatic diagnosis is only possible if the micro controller of the television is working correctly and only to a certain extend. When this is not the case, ComPair will guide you through the fault finding tree by asking you questions (e.g. *Does the screen give a picture? Click on the correct answer: YES / NO*) and showing you examples (e.g. *Measure test-point I7 and click on the correct oscillogram you see on the oscilloscope*). You can answer by clicking on a link (e.g. text or a waveform picture) that will bring you to the next step in the fault finding process.

By a combination of automatic diagnostics and an interactive question / answer procedure, ComPair will enable you to find most problems in a fast and effective way.

Beside fault finding, ComPair provides some **additional features** like:

- Up- or downloading of pre-sets.
- Managing of pre-set lists.
- Emulation of the (European) Dealer Service Tool (DST).
- If both ComPair and Force/SearchMan (Electronic Service Manual) are installed, all the schematics and the PWBs of the set are available by clicking on the appropriate hyperlink.
  Example: *Measure the DC-voltage on capacitor C2568 (Schematic/Panel) at the Mono-carrier*.
  - Click on the “Panel” hyperlink to automatically show the PWB with a highlighted capacitor C2568.
  - Click on the “Schematic” hyperlink to automatically show the position of the highlighted capacitor.

5.4.3 How To Connect

This is described in the chassis fault finding database in ComPair.

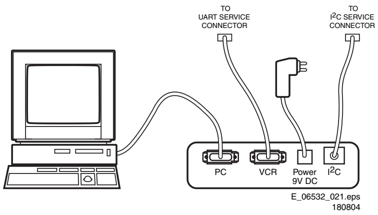


Figure 5-4 ComPair interface connection

5.4.4 How To Order

ComPair order codes (EU/AP/LATAM):

- Starter kit ComPair32/SearchMan32 software and ComPair interface (excl. transformer): 3122 785 90450.
- ComPair interface (excl. transformer): 4822 727 21631.
- Starter kit ComPair32 software (registration version): 3122 785 60040.
- Starter kit SearchMan32 software: 3122 785 60050.
- ComPair32 CD (update): 3122 785 60070 (year 2002), 3122 785 60110 (year 2003 onwards).
- SearchMan32 CD (update): 3122 785 60080 (year 2002), 3122 785 60120 (year 2003), 3122 785 60130 (year 2004).
- ComPair firmware upgrade IC: 3122 785 90510.
- Transformer (non-UK): 4822 727 21632.
- Transformer UK: 4822 727 21633.
- ComPair interface cable: 3122 785 90004.
- ComPair interface extension cable: 3139 131 03791.
- ComPair UART interface cable: 3122 785 90630

ComPair order codes (US):

- ComPair Software: ST4191.
- ComPair Interface Box: 4822 727 21631.
- AC Adapter: T405-ND.
- ComPair Quick Start Guide: ST4190.
- ComPair interface extension cable: 3139 131 03791.
- ComPair UART interface cable: 3122 785 90630

Note: If you encounter any problems, contact your local support desk.

5.5 Error Codes

The error code buffer contains all errors detected since the last time the buffer was erased. The buffer is written from left to right. When an error occurs that is not yet in the error code buffer, it is displayed at the left side and all other errors shift one position to the right.

5.5.1 How To Read The Error Buffer

You can read the error buffer in 3 ways:

- On screen via the SAM (if you have a picture). **Examples:**
  - ERROR: 0 0 0 0 0 : No errors detected
  - ERROR: 6 0 0 0 0 : Error code 6 is the last and only detected error
  - ERROR: 9 6 0 0 0 : Error code 6 was detected first and error code 9 is the last detected (newest) error
- Via the blinking LED procedure (when you have no picture). See “The Blinking LED Procedure”.
- Via ComPair.

5.5.2 How To Clear The Error Buffer

The error code buffer is cleared in the following cases:

- By using the CLEAR command in the SAM menu:
  - To enter SAM, press the following key sequence on the remote control transmitter: “**062596**” directly followed by the OSD/STATUS button (do not allow the display to time out between entries while keying the sequence).
  - Make sure the menu item CLEAR is highlighted. Use the MENU UP/DOWN buttons, if necessary.
  - Press the MENU RIGHT button to clear the error buffer. The text on the right side of the “CLEAR” line will change from “CLEAR?” to “CLEARED”
- If the contents of the error buffer have not changed for 50 hours, the error buffer resets automatically.

Note: If you exit SAM by disconnecting the AC power from the television set, the error buffer is not reset.

5.5.3 Error Codes

In case of non-intermittent faults, write down the errors present in the error buffer and clear the error buffer before you begin the repair. This ensures that old error codes are no longer present.

If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error and not the actual cause of the problem (for example, a fault in the protection detection circuitry can also lead to a protection).

Table 5-2 Error code overview

Error	Device	Error description	Check item	Diagram
0	Not applicable	No Error		
1	Not applicable	X-Ray/Over-voltage protection (US only)	2411, 2412, 2413, 6404, 6411, 6412	A2
2	Not applicable	High beam (BCI) protection	3412, 7405	A2
3	Not applicable	Vertical guard protection	3466, 7451	A2
4	Not applicable	-	-	-
5	Not applicable	+5v protection	7604, 7605	A5
6	I2C bus	General I2C error	7200, 3207, 3214	A4
7	Not applicable	-	-	-
8	Not applicable	-	-	-
9	24C16	I2C error while communicating with the EEPROM	7601, 3604, 3605	A5
10	Tuner	I2C error while communicating with the PLL tuner	1000, 5001	A3
11	TDA6107/A	Black current loop instability protection	7330, 3351, CRT	B1
12	Not applicable	-	-	-
13	Not applicable	-	-	-
14	Not applicable	-	-	-
15	Not applicable	-	-	-
16	Not applicable	-	-	-
17	Not applicable	-	-	-
18	Not applicable	-	-	-
19	TDA1200x	I2C error while communicating with sound decoder in Hercules IC	7200	A4
20	TDA1200x	I2C error while communicating with video cosmic in Hercules IC	7200	A4
21	DPTVSVP	I2C error while communicating with the 3D Processor	7201, 3223, 3224	T1
22	TDA9332	I2C error while communicating with the HOP	7221, 3244, 3629, 7226, 7227	T5
23	SAA5565	I2C error while communicating with the Painter uProcessor	7206, 3254, 3256	T2
24	AD9883	I2C error while communicating with the ADC	7210, 3268, 3270	T3
25	Not applicable	No communication possible with Trident module	-	T
26	SII9993	I2C error while communicating with the HDMI receiver	7002, 3016, 3019	M1

5.6 The Blinking LED Procedure

Using this procedure, you can make the contents of the error buffer visible via the front LED. This is especially useful when there is no picture.

When the SDM is entered, the front LED will blink the contents of the error-buffer:
- When all the error-codes are displayed, the sequence finishes with a LED blink of 1.5 seconds,
- The sequence starts again.

Example of error buffer: **12 9 6 0 0**
After entering SDM, the following occurs:
- 1 long blink of 5 seconds to start the sequence,
- 12 short blinks followed by a pause of 1.5 seconds,
- 9 short blinks followed by a pause of 1.5 seconds,
- 6 short blinks followed by a pause of 1.5 seconds,
- 1 long blink of 1.5 seconds to finish the sequence,
- The sequence starts again at 12 short blinks.

5.7 Protections

If a fault situation is detected, an error code will be generated; and, if necessary, the television set will go into protection mode. Blinking of the red LED at a frequency of 3 Hz indicates the protection mode. In some error cases, the microprocessor does not put the set in protection mode. The error codes of the error buffer and the blinking LED procedure can be read via the Service Default Menu (SDM), or via ComPair.

To get a quick diagnosis the chassis has three service modes implemented:
- The Customer Service Mode (CSM).
- The Service Default Mode (SDM).
- The Service Alignment Mode (SAM).

For a detailed mode description, see the relevant sections.

5.8 Fault Finding and Repair Tips

Notes:
- It is assumed that the components are mounted correctly with correct values and no bad solder joints.
- Before any fault finding actions, check if the correct options are set.

5.8.1 NVM Editor

In some cases, it can be handy if one directly can change the NVM contents. This can be done with the “NVM Editor” in SAM mode. In the next table, the default NVM values are given.

Table 5-3 NVM default values for NAFTA-region

Item	Address (dec)	Default values (hex) 27MT5405	27PT8420	30PW8420	29PT8422	32PW8422	30MW5405
EW (EW Width)	19	21	21	30	21	30	30
PW (EW Parabola Width)	20	18	18	14	18	14	14
HS (Horizontal Shift)	21	27	27	20	27	20	20
HP (Horizontal Parallelogram)	22	07	07	07	07	07	07
HB (Horizontal Bow)	23	07	07	07	07	07	07
UCP (EW Upper Corner Parabola)	24	1E	1E	1E	1E	1E	1E
LCP (EW Lower Corner Parabola)	25	21	21	19	21	19	19
TC (EW Trapezium)	26	1E	1E	1A	1E	1A	1A
VS (Vertical Slope)	27	32	32	30	32	30	30
VA (Vertical Amplitude)	28	18	18	1C	18	1C	1C
SC (S-Correction)	29	1E	1E	14	1E	14	14
VSH (Vertical Shift)	30	1A	1A	1A	1A	1A	1A
VX (Vertical Zoom)	31	19	19	19	19	19	19
VSL (Vertical Scroll)	32	20	20	20	20	20	20
EHTC (Vertical Linearity)	33	20	20	20	20	20	20
BLOR (Black Level Offset - Red)	34	07	07	08	07	08	08
BLOG (Black Level Offset - Green)	35	07	07	08	07	08	08
AGC (AGC Takeover)	36	1E	1E	1E	1E	1E	1E
OIF (IF-PLL Offset)	37	26	26	26	26	26	26
Vertival Wait	38	0F	0F	0F	0F	0F	0F
H60 and V60	39	09	09	09	09	09	09
60 Hz Vertical Amplitude	42	30	30	30	30	30	30
YD & CL	43	06	06	06	06	06	06
RGB amplitude for full teletext mode	46	00	00	00	00	00	00
NVM_TABLE_VERSION	60	10	10	10	10	10	10
OPTION_TABLE_VERSION	61	01	01	01	01	01	01
CVI_BLOR	62	03	03	08	03	08	08
CVI_BLOG	63	08	08	08	08	08	08
TXT Brightness	64	17	17	17	17	17	17
V60 offset (60Hz Vertical Amplitude)	66	FE	FE	FE	FE	FE	FE
FOAB, CHSE	139	03	03	03	03	03	03
NVM_SOC_SMD	142	10	10	10	10	10	10
NVM_FMWS	149	03	03	03	03	03	03
NVM_ASD_SC1_THR	150	10	10	10	10	10	10
NVM_CRYSTALALIGN	208	3F	3F	3F	3F	3F	3F
Last Brightness (VID PP others)	264	30	30	30	30	30	30
Last Color (VID PP others)	265	28	28	28	28	28	28
Last Contrast (VID PP others)	266	55	55	55	55	55	55
Last Sharpness (VID PP others)	267	05	05	05	05	05	05
Last Hue (VID PP others)	268	35	35	35	35	35	35
Last Color Temperature (VID PP others)	269	1D	1D	1D	1D	1D	1D
White-D Cool Red	294	FD	FD	FD	FD	FD	FD
White-D Cool Green	295	00	00	00	00	00	00
White-D Cool Blue	296	04	04	05	04	05	05
White-D Normal Red	297	21	21	21	21	21	21
White-D Normal Green	298	17	17	17	17	17	17
White-D Normal Blue	299	17	17	17	17	17	17
White-D Warm Red	300	03	03	02	03	02	02
White-D Warm Green	301	00	00	00	00	00	00
White-D Warm Blue	302	F6	F6	FA	F6	FA	FA
Last Smart Sound	342	03	03	03	03	03	03
Last Volume	343	14	14	14	14	14	14
Last Balance	344	32	32	32	32	32	32
Last Treble (AUD PP others)	345	32	32	32	32	32	32
Last Bass (AUD PP others)	346	32	32	32	32	32	32

5.8.2 Power Supply

Set Not Working

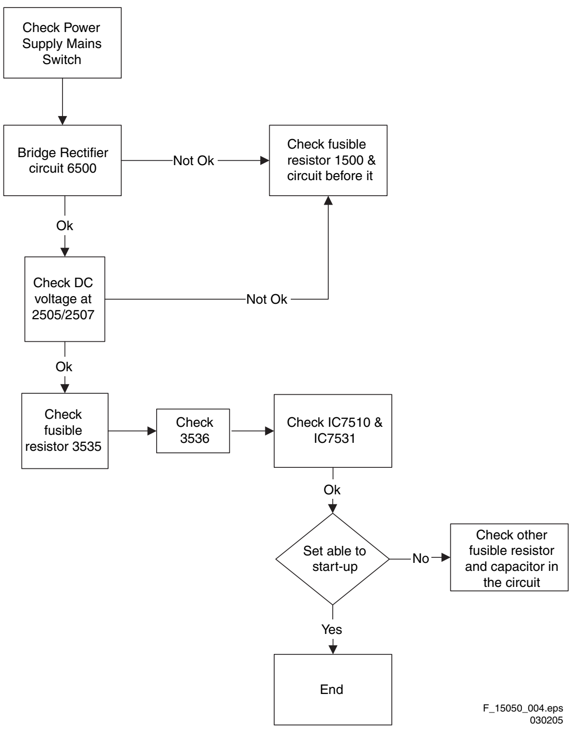


Figure 5-5 Fault finding tree "Set not working"

Set Does Not Start Up

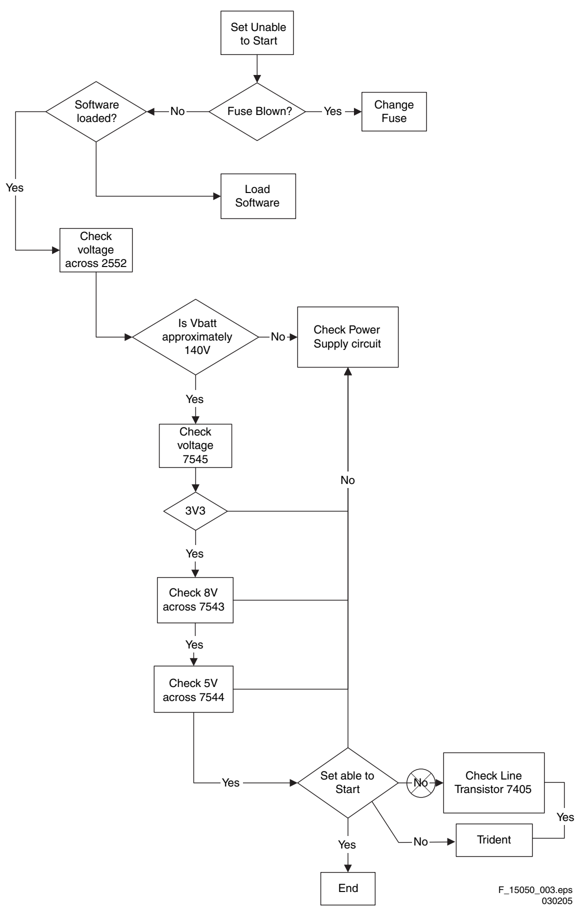


Figure 5-6 Fault finding tree "Set does not start up"

5.8.3 Deflection

One Thin Vertical Line

Quick check:

- Set in protection mode.
- LED blinking with error "3".

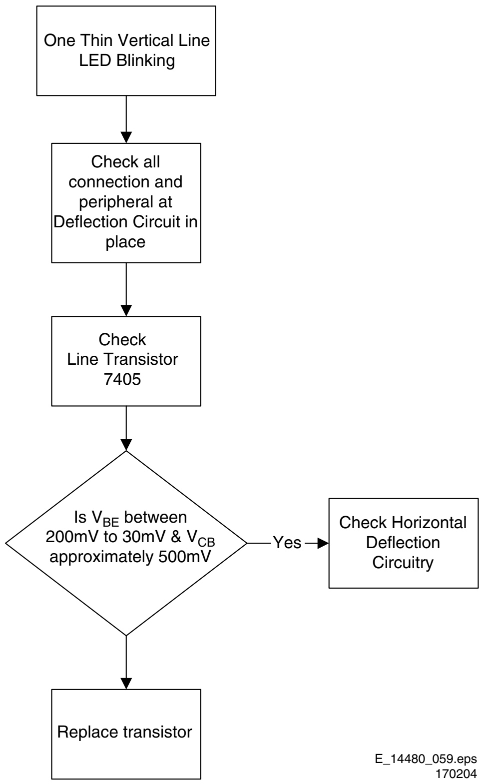


Figure 5-7 Fault finding tree "One thin vertical line"

One Thin Horizontal Line

Quick check:

- Set in protection mode.
- LED blinking with error "2".

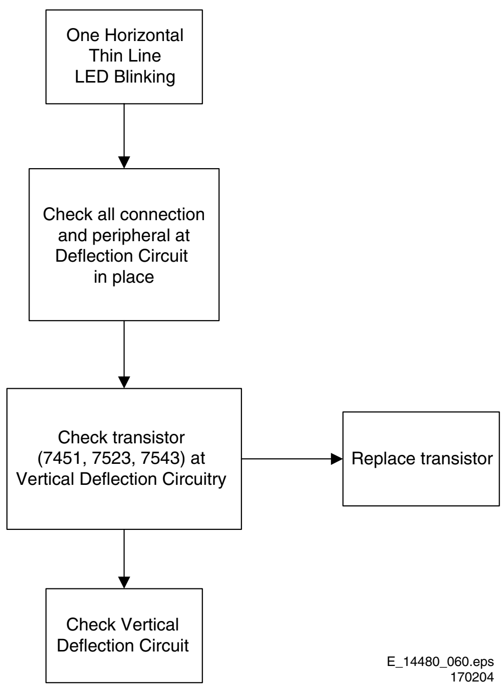


Figure 5-8 Fault finding tree "One thin horizontal line"

Blank Screen

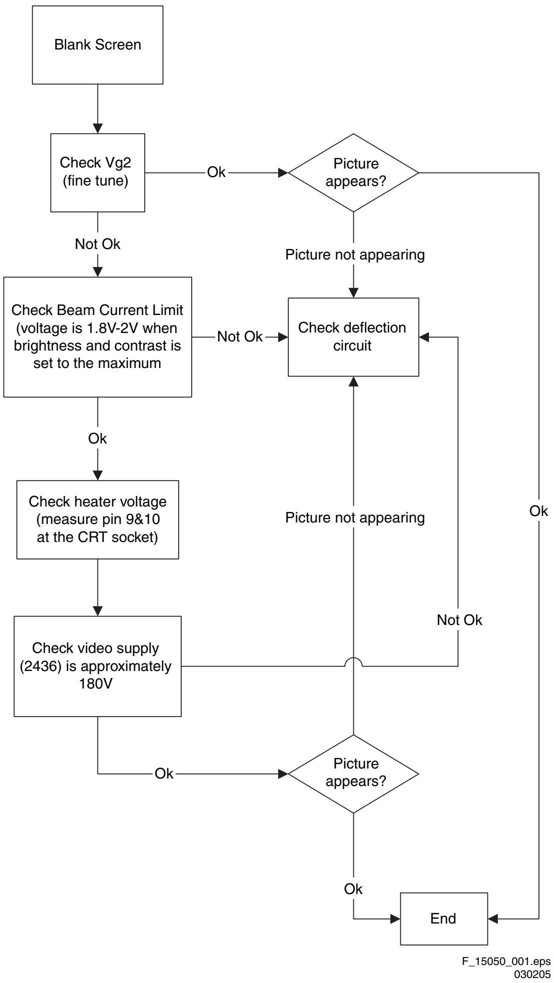


Figure 5-9 Fault finding tree "Blank screen"

5.8.4 Source Selection

Set is not able to go into AV or any missing AV is encountered

E.g. AV1 is available but not able to enter to AV1: Check if the option setting is correct.

Set is able to go to AV, but no audio is heard.

1. Check that continuity of signal is there from the SCART/ Cinch input to the input of the Hercules.
2. If continuity is there and still no audio, check that option settings are correct.
3. If logic setting is correct and still no audio, proceed to Audio Decoder/Processor troubleshooting section.

Set is able to go into AV but no video is available:

1. Check continuity from AV input to HERCULES depending on the input.
2. If continuity is available and yet no video, proceed to Video Processor troubleshooting section.

5.8.5 Tuner and IF

No Picture

1. Check that the Option settings are correct.
2. If correct, check that supply voltages are there.
3. If supply voltages are present, check whether picture is present in AV.
4. If picture is present in AV, check with the scope the Tuner IF output signal by manual storage to a known channel.
5. If IF output is present, Tuner is working fine. If no IF output, I2C data lines may be open, check continuity of I2C lines. If I2C lines are ok, Tuner may be defect, replaced Tuner.
6. If Tuner IF is present and yet still no picture in RF mode, go to Video Processing troubleshooting section.

No Picture, No Sound

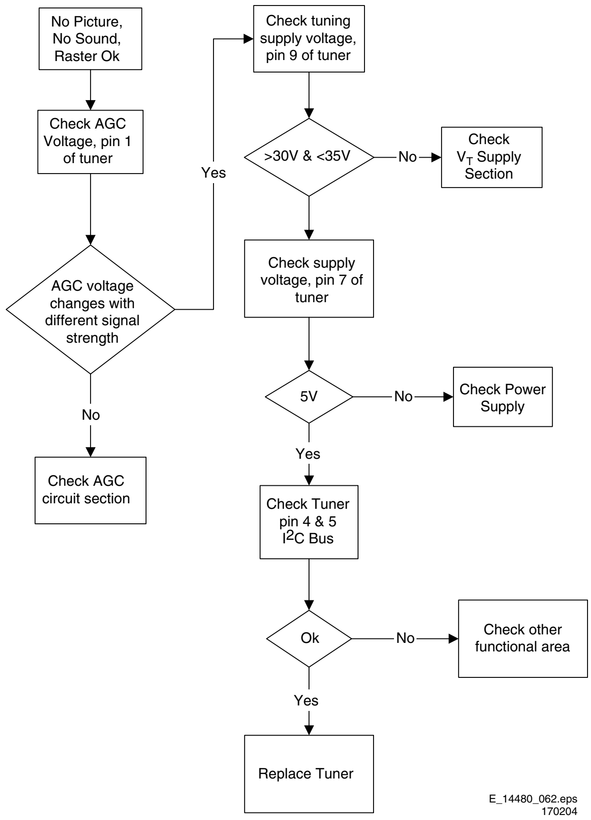


Figure 5-10 Fault finding tree "No picture, no sound"

Picture Ok, No Sound

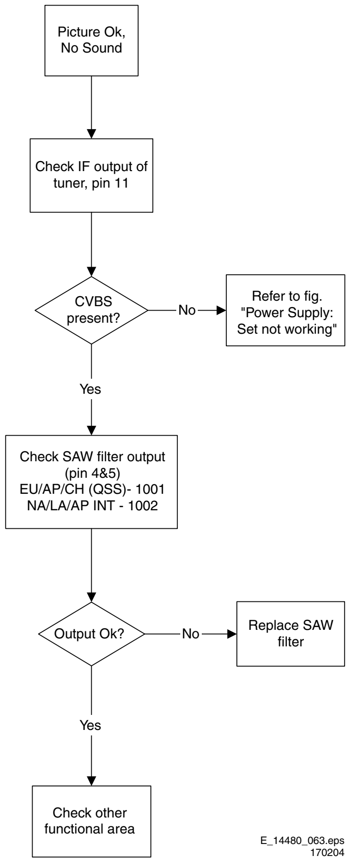


Figure 5-11 Fault finding tree “Picture ok, no sound”

Unable To Perform Tuning

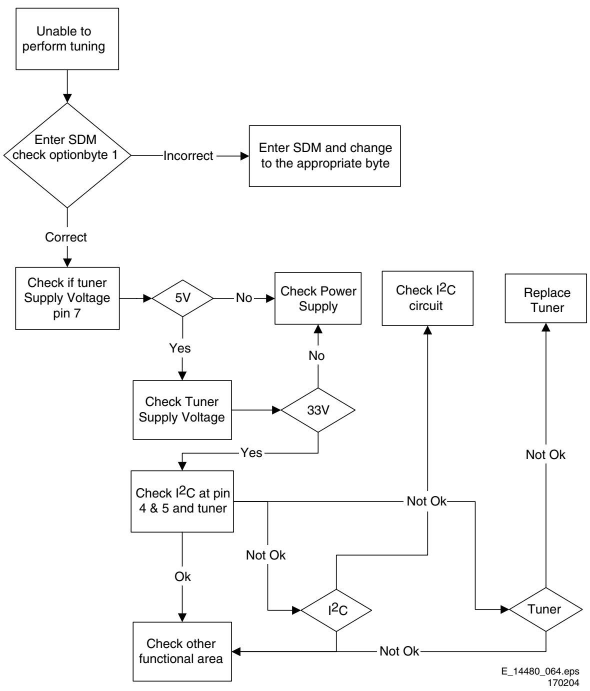


Figure 5-12 Fault finding tree “Unable to perform tuning”

5.8.6 Controller

Below are some guidelines for troubleshooting of the Micro Controller function. Normally Micro Controller should be checked when there is a problem of startup.

1. Check that both +3.3 V_dc and +1.8 V_dc are present.
2. Check that crystal oscillator is working.
3. Check that Power Good signal is at “high” logic, normal operation.
4. Check that HERCULES is not in standby mode. Pin 15 of HERCULES should be 0 V_dc.
5. Make sure H-drive pulse is there. This can be checked at resistor R3239. If H-drive does not exist, remove resistor R3239 to check if there is loading.

Note: When the set shuts down after a few second after power “on”, the main cause is that Vg2 not aligned properly, try adjusting Vg2 during the few seconds of power “on”.

5.8.7 Video Processing

No Picture

When “no picture in RF”, first check if the microprocessor is functioning ok in section “Controller”. If that is ok, follow the next steps.

When “no picture in AV”, first check if the video source selection is functioning ok in section “Source Selection”. If that is ok, follow the next steps.

1. Check that normal operating conditions are met.
2. Check that there is video signal at pin 81. If no video, demodulator part of the HERCULES is faulty, replace with new HERCULES.
3. If video signal is available at pin 81, check pin 56, 57, and 58 for the RGB signal.
4. If signal is not available, try checking the BRIGHTNESS and/or CONTRAST control, and make sure it is not at zero.
5. If still with the correct settings and no video is available, proceed to the CRT/RGB amplifier diagram.

For sets with TDA9178, follow steps below:

1. Put Option Byte 2 bit 4 to “0”; if video signal is not available, then check fault finding section “Controller”, Section “Source Selection”, and steps above.
2. If video is available but not correct, put Option Byte 2 bit 4 to “1”, then check if LTI panel is present. If not, put LTI panel in the main chassis (connector 1221).
3. If LTI panel is in main chassis, check cable between LTI panel and main chassis (position is 1206). If it is connected, then the LTI panel is faulty, replace it.

For sets with Scavem, and Scavem does not work, follow steps below:

1. Check Scavem coil connector (position is 1361) if connected; if not, connect it.
2. If connected, check NVM “bit storage” byte 1 bit 7; if it is not “1”, set it to “1”.
3. If it is “1”, then check the data of the NVM addresses as in the next table. If the data is not correct, then set these addresses to diagram values.
4. If it still not works, track Scavem output from pin64 of HERCULES to CRT panel.

Table 5-4 NVM default values for Scavem

Description	Address (dec)	Address (hex)	Value (hex)
SPR, WS	140	8C	00
VMA, SVM	141	8D	32
NVM_SOC_SMD	142	8E	03

5.8.8 Audio Processing

No Sound

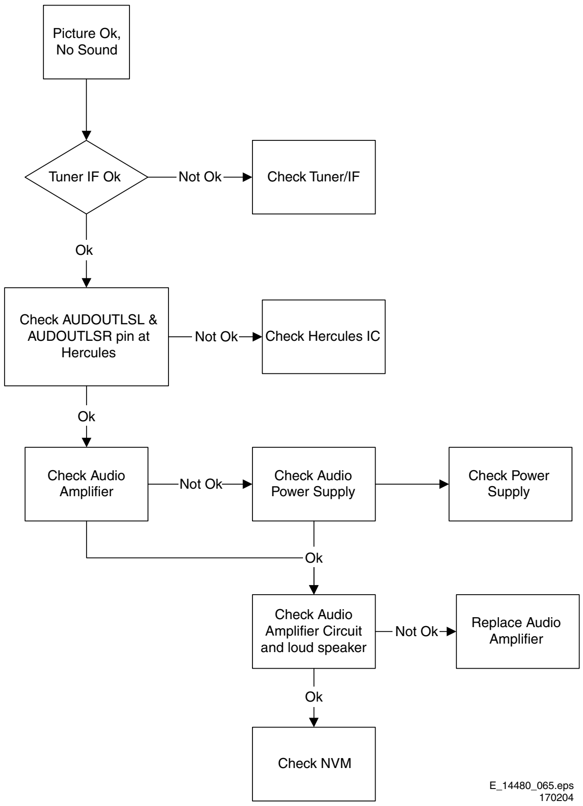


Figure 5-13 Fault finding tree “No sound”

No RF audio for QSS/Inter-Carrier stereo sets.

1. Check pin 99 and 100 for SIF signal (for QSS) or pin 104 and 105 for video with SIF (for Inter-Carrier)
2. If signal is not present, check for the QSS/FMI bit settings. Check also the NVM data.
3. If signals are present and still no audio, check the audio supply voltage +8V are present.
4. If still no audio signal at Hercules output, Hercules is faulty.

No AV audio.

1. Check troubleshooting methods in section “Source Selection”.
2. Check the output of the Hercules to see if there is signal available. If no, check the normal operating condition and also the NVM data.
3. If still no audio signal at Hercules output, Hercules is faulty.

Note: If there is audio signal at Hercules output and no audio at loudspeaker, proceed to Audio Amplifier troubleshooting methods.

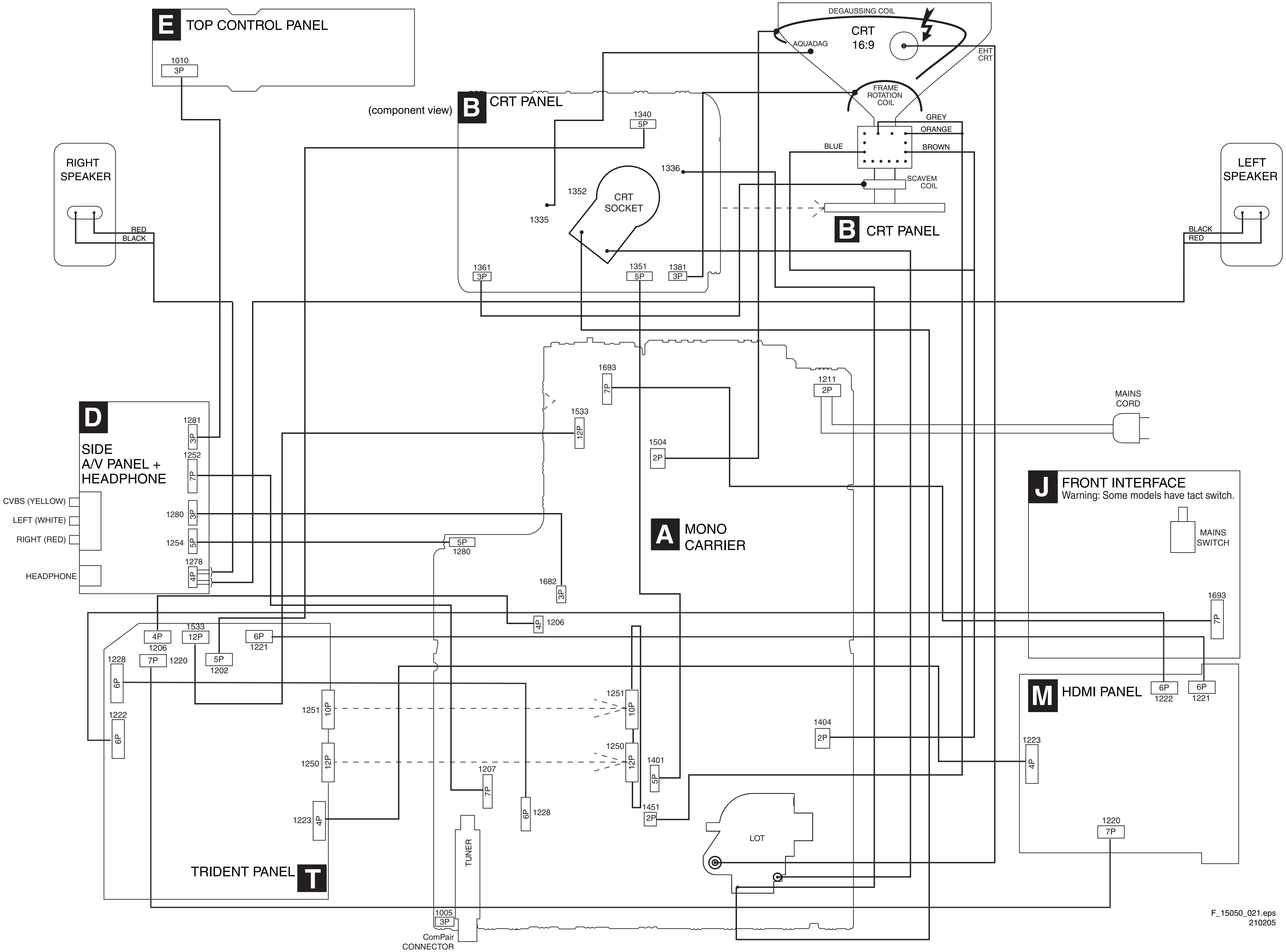
5.8.9 Audio Amplifier

No RF as well as AV audio at the loudspeaker:

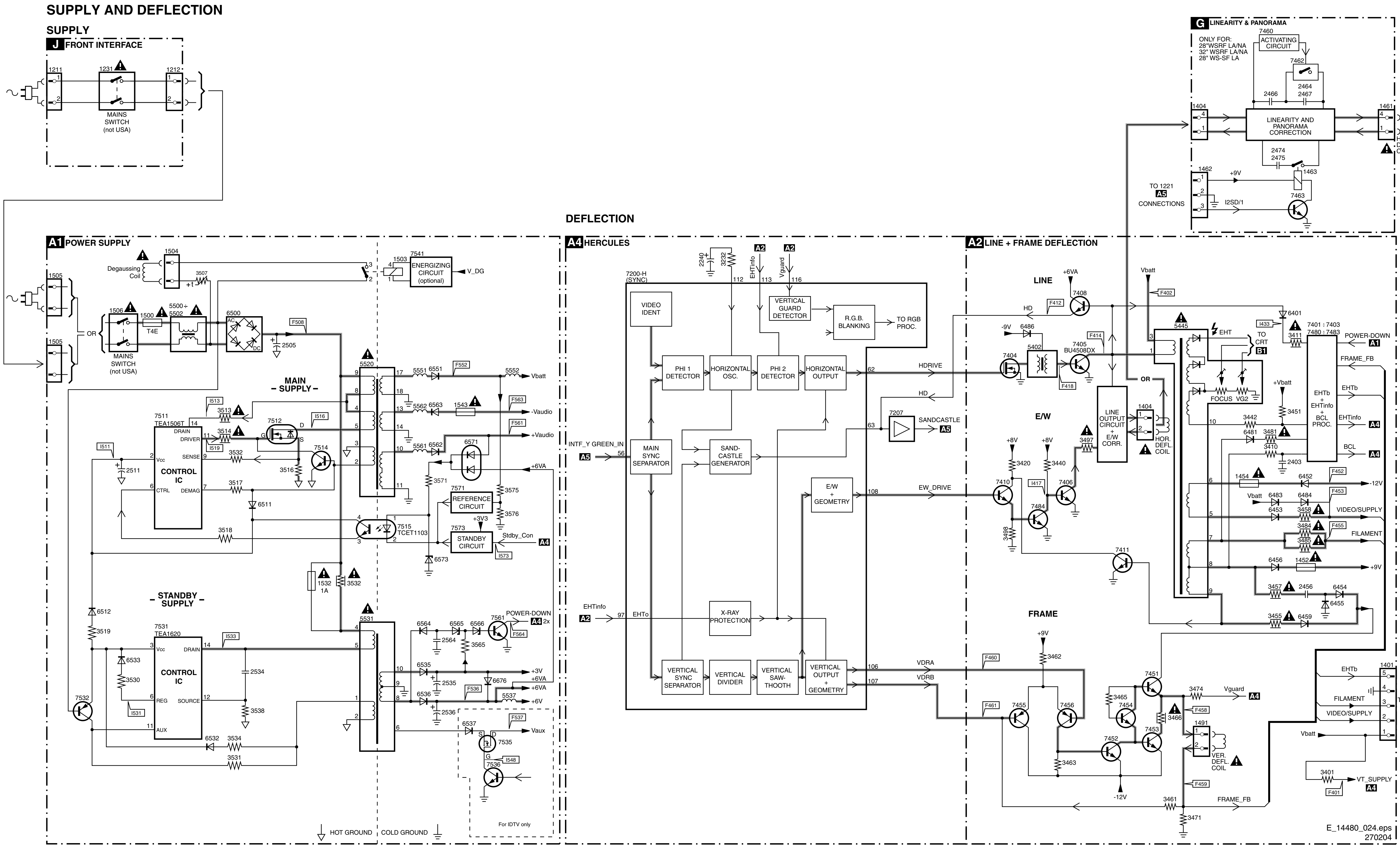
1. Check that the normal operation condition of the amplifier is met.
2. If normal operation conditions are met, check the continuity from Hercules output to input of the amplifier.
3. If continuity is there and still no audio, check speaker wire connections. If still no audio, amplifier IC might be faulty.

6. Block Diagrams, Testpoint Overviews, and Waveforms

Wiring Diagram

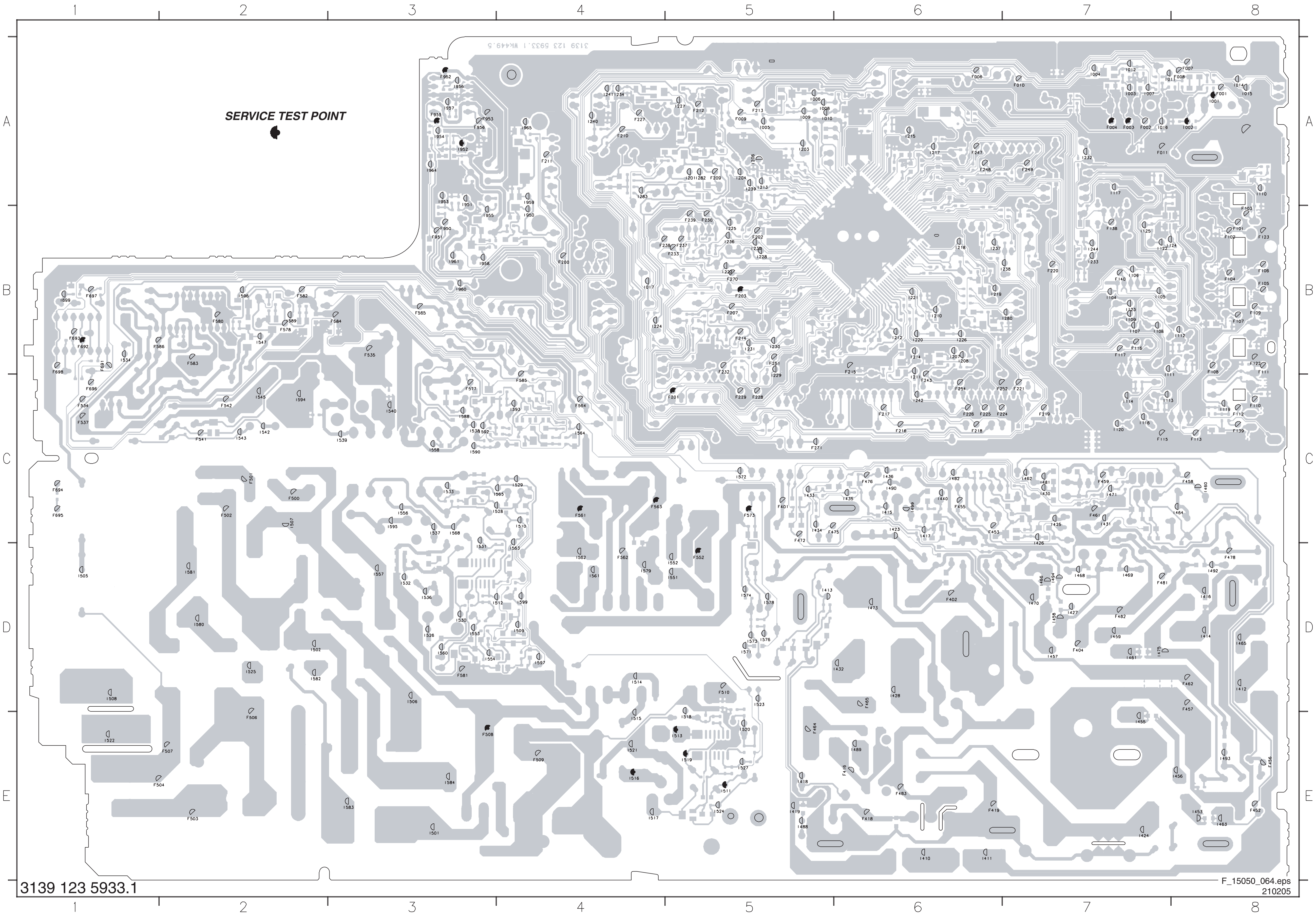


Block Diagram Supply and Deflection

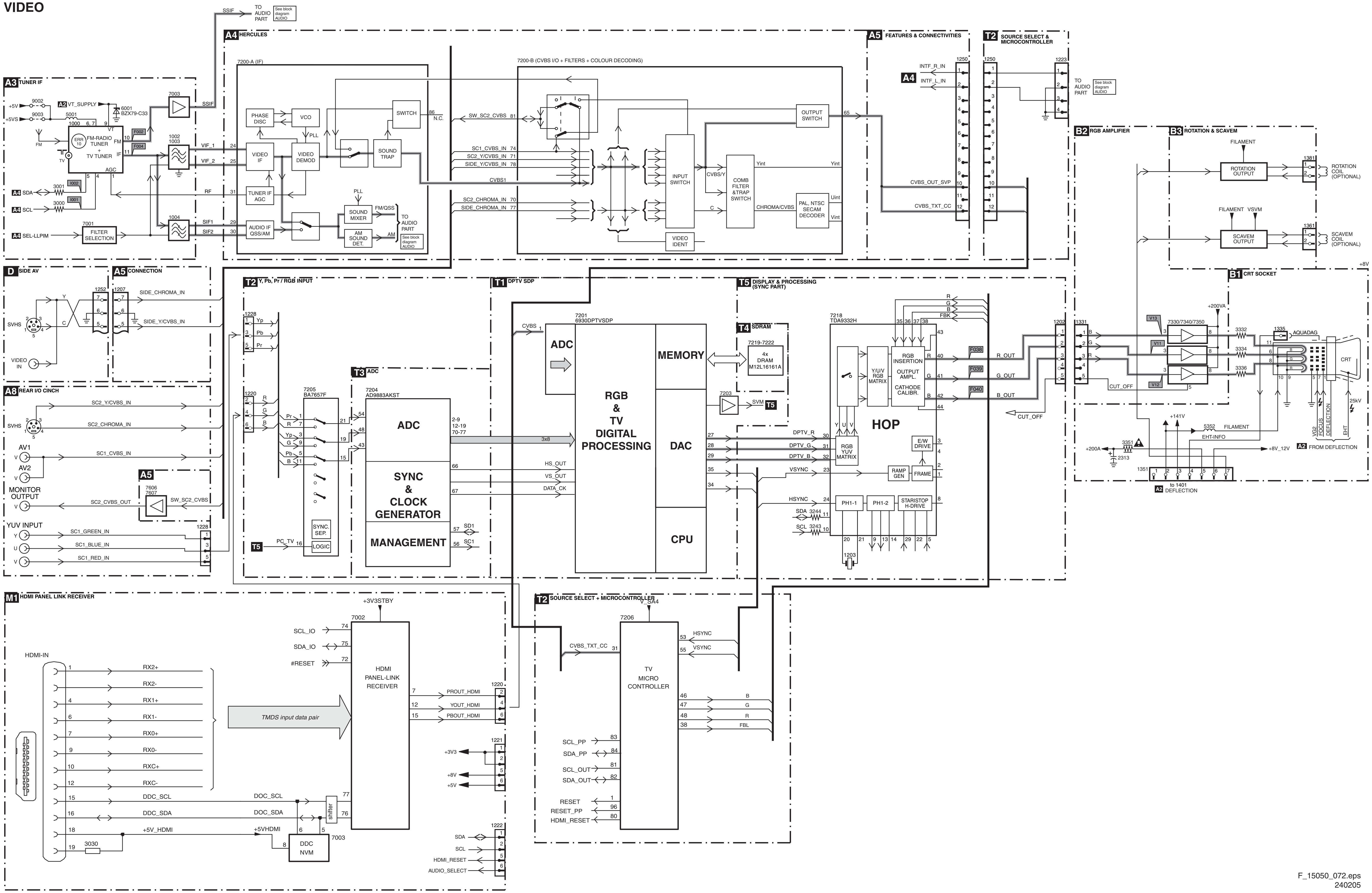


Testpoint Overview Mono Carrier

F001	A8
F002	A7
F003	***A7***
F004	***A7***
F005	A8
F006	A6
F007	A8
F008	A8
F009	A5
F010	A7
F011	A7
F101	B8
F102	B8
F103	B8
F104	B8
F105	B8
F106	B8
F107	B8
F108	B8
F109	B8
F110	C8
F111	B8
F112	C8
F113	C8
F115	C7
F116	B7
F117	B7
F122	B8
F123	B8
F138	B7
F139	C8
F140	B7
F200	B4
F201	***C5***
F202	B5
F203	***B5***
F207	B5
F209	A5
F210	A4
F211	A4
F212	A5
F213	A5
F214	B5
F215	B6
F216	C6
F217	C6
F218	C6
F219	C7
F220	B7
F221	C7
F224	C6
F225	C6
F226	C6
F227	A4
F228	C5
F229	C5
F230	B5
F232	B5
F233	B5
F237	B5
F238	B4
F239	B5
F243	C6
F247	A6
F248	A6
F249	A7
F251	B5
F252	C6
F254	C6
F270	B5
F271	C5
F401	C5
F402	D6
F404	D7
F416	E6
F418	E6
F419	E6
F452	E8
F453	C6
F455	C6
F456	E8
F457	D8
F458	C8
F459	C7
F461	C7
F462	D8
F464	E5
F465	D6
F472	C5
F475	C5
F476	C6
F478	D8
F481	D7
F482	D7
F483	E6
F500	C2
F501	C2
F502	C2
F503	E2
F504	E1
F506	E2
F507	E2
F508	***E3***
F509	E4
F510	D5
F534	C1
F535	B3
F537	C1
F541	C2
F542	C2
F552	***D5***
F561	C4
F562	D4
F563	***C4***
F564	C4
F565	B3
F573	***C5***
F577	C3
F578	B2
F580	B2
F581	D3
F582	B2
F583	B2
F584	B3
F585	C4
F586	B1
F691	B1
F692	***B1***
F693	B1
F694	C1
F695	C1
F696	C1
F697	B1
F698	B1
F950	B3
F951	B3
F952	***A3***
F953	A3
F955	***A3***
F956	A3
I001	***A8***
I002	***A8***
I003	A7
I004	A7
I005	A5
I006	A5
I007	A7
I008	A5
I009	A5
I010	A5
I011	A7
I012	A7
I014	A8
I015	A8
I016	A7
I017	B4
I104	B7
I105	B7
I106	B7
I107	B7
I108	B7
I109	B7
I110	A8
I111	C7
I112	B8
I113	C7
I114	C7
I116	C7
I117	A7
I119	C8
I120	C7
I122	B7
I123	B7
I124	B8
I125	B7
I201	A5
I203	A5
I204	A5
I206	A5
I207	B6
I208	B6
I210	B6
I211	C6
I212	B6
I213	A5
I214	B6
I215	A6
I217	A6
I218	B6
I219	B6
I220	B6
I221	B6
I222	B5
I224	B4
I225	B5
I226	B6
I227	A5
I228	B5
I229	C5
I230	B5
I231	B5
I232	A7
I233	B7
I234	A4
I235	B5
I236	B5
I237	B6
I238	B7
I239	A5
I240	A4
I241	A4
I242	C6
I244	B7
I280	B7
I282	A5
I283	A4
I410	E6
I411	E6
I412	D8
I413	D5
I414	D8
I415	C6
I416	D8
I417	C6
I418	E5
I419	E5
I423	C6
I424	E7
I425	C7
I426	D7
I427	D7
I428	D6
I430	C7
I431	C7
I432	D6
I433	C5
I434	C5
I435	C6
I436	C6
I440	C6
I453	E8
I455	E7
I456	E8
I457	D7
I458	D7
I459	D7
I460	C8
I461	D7
I462	C7
I463	E8
I464	C8
I465	D8
I466	D7
I468	D7
I469	D7
I470	D7
I471	C7
I473	D6
I475	D7
I481	C7
I482	C6
I488	E5
I489	E6
I490	C6
I492	D8
I493	E8
I494	D7
I499	C6
I501	E3
I502	D2
I505	D1
I506	D3
I507	C2
I508	D1
I509	D4
I510	C4
I511	***E5***
I512	D4
I513	***E5***
I514	D4
I515	E4
I516	***E4***
I517	E4
I518	E5
I519	***E5***
I520	E5
I521	E4
I522	E1
I523	D5
I524	E5
I525	D2
I526	D3
I527	E5
I528	C4
I529	C4
I530	D3
I531	D3
I532	D3
I533	C3
I534	B1
I536	D3
I537	C3
I538	C3
I539	C3
I540	C3
I542	C2
I543	C2
I545	C2
I547	B2
I551	D5
I552	D5
I553	D3
I554	D3
I556	C3
I557	D3
I558	C3
I560	D3
I561	D4
I562	D4
I563	D4
I564	C4
I565	C4
I568	C3
I571	D5
I572	C5
I573	D5
I574	D5
I576	D5
I578	D5
I579	D4
I580	D2
I581	D2
I582	D2
I583	E3
I584	E3
I588	C3
I589	B2
I590	C3
I592	C3
I593	C4
I594	C2
I595	C3
I596	B2
I597	D4
I599	D4
I699	B1
I950	B4
I951	***A3***
I952	***A3***
I953	A3
I954	A3
I955	B3
I956	A3
I957	A3
I958	B3
I959	A4
I960	B3
I961	B3
I964	A3
I965	A4

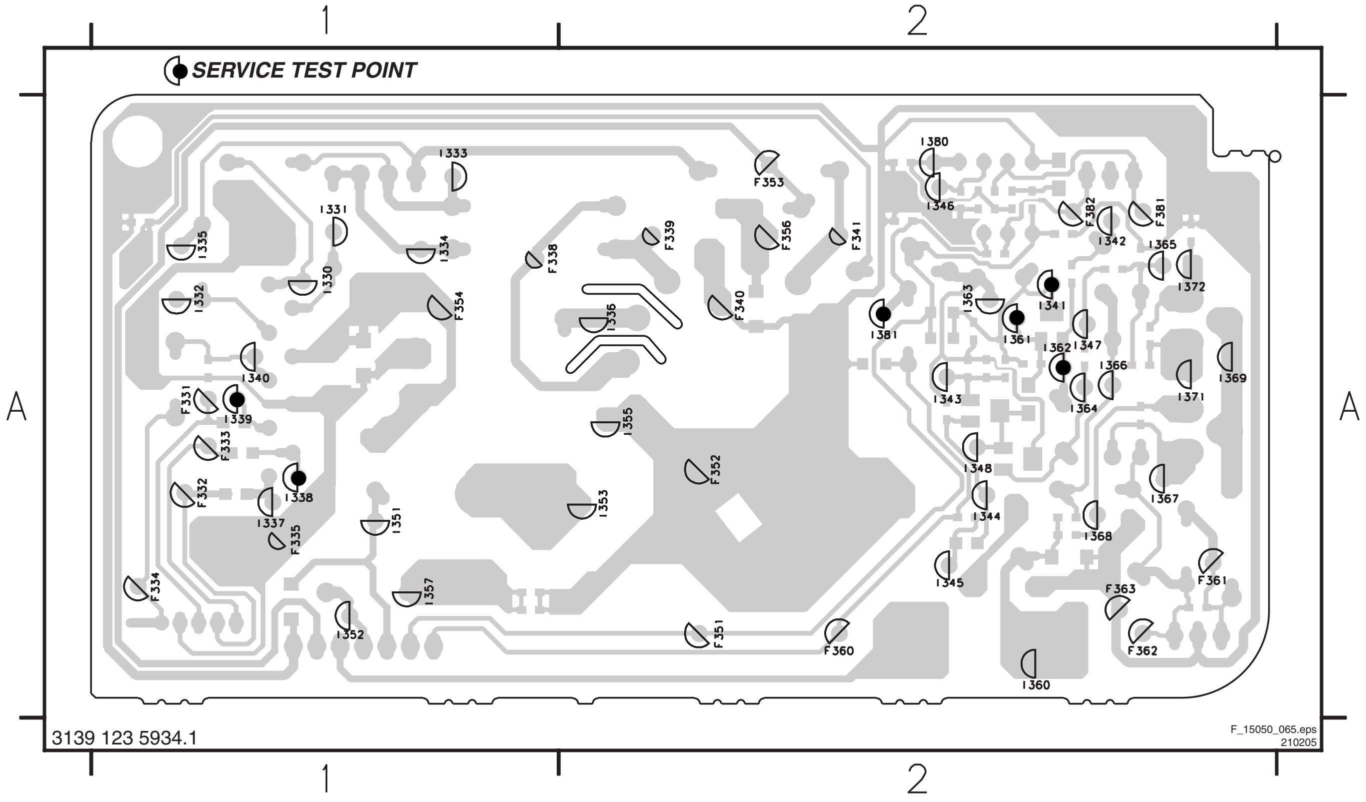


Block Diagram Video



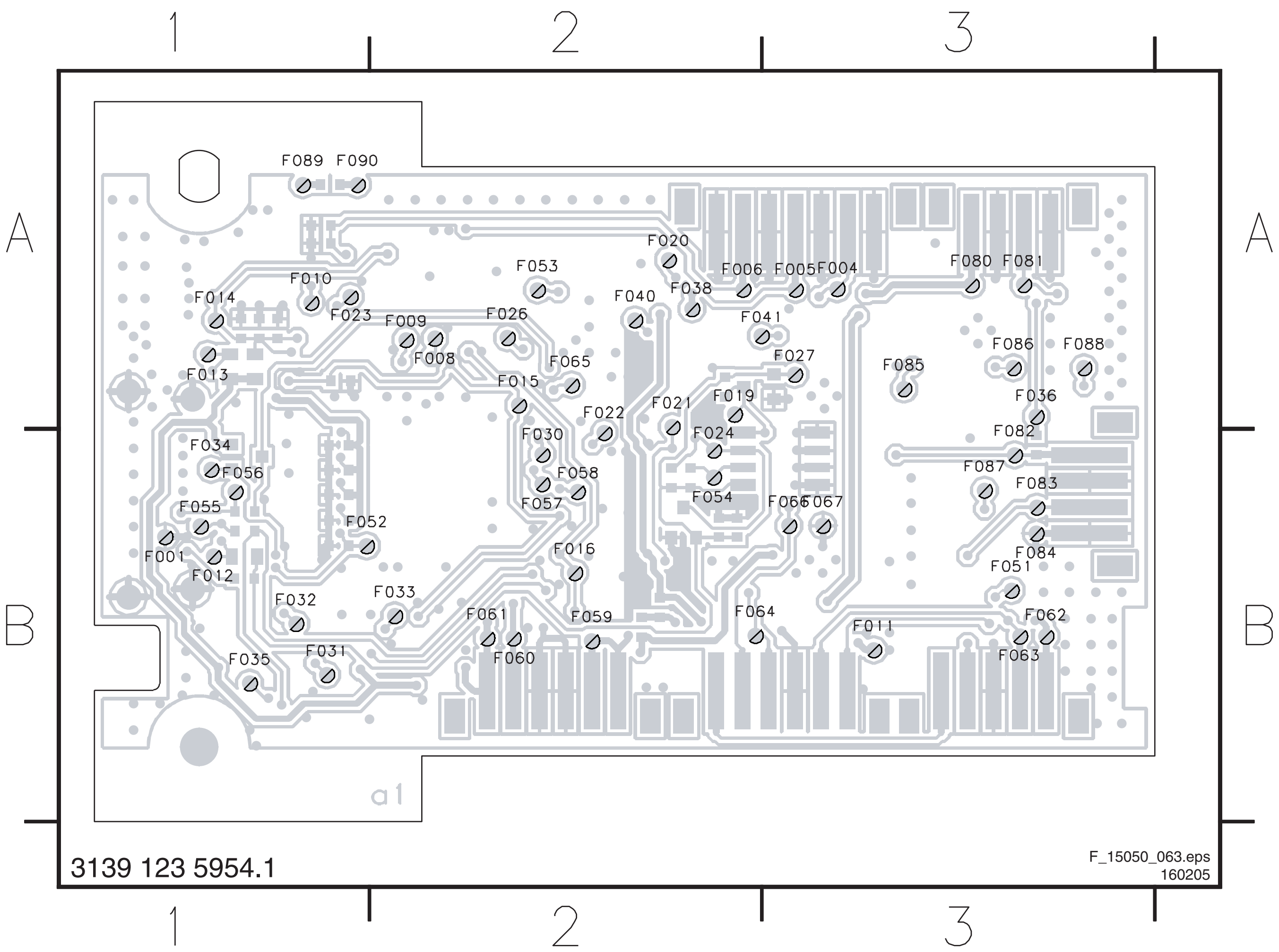
Testpoint Overview CRT Panel (Family Board)

F331 A1	F335 A1	F341 A2	F354 A1	F362 A2	I330 A1	I334 A1	***I338 A1***	I342 A2	I346 A2	I352 A1	I360 A2	I364 A2	I368 A2	I380 A2
F332 A1	F338 A1	F351 A2	F356 A2	F363 A2	I331 A1	I335 A1	***I339 A1***	I343 A2	I347 A2	I353 A2	***I361 A2***	I365 A2	I369 A2	***I381 A2***
F333 A1	F339 A2	F352 A2	F360 A2	F381 A2	I332 A1	I336 A2	I340 A1	I344 A2	I348 A2	I355 A2	***I362 A2***	I366 A2	I371 A2	
F334 A1	F340 A2	F353 A2	F361 A2	F382 A2	I333 A1	I337 A1	***I341 A2***	I345 A2	I351 A1	I357 A1	I363 A2	I367 A2	I372 A2	



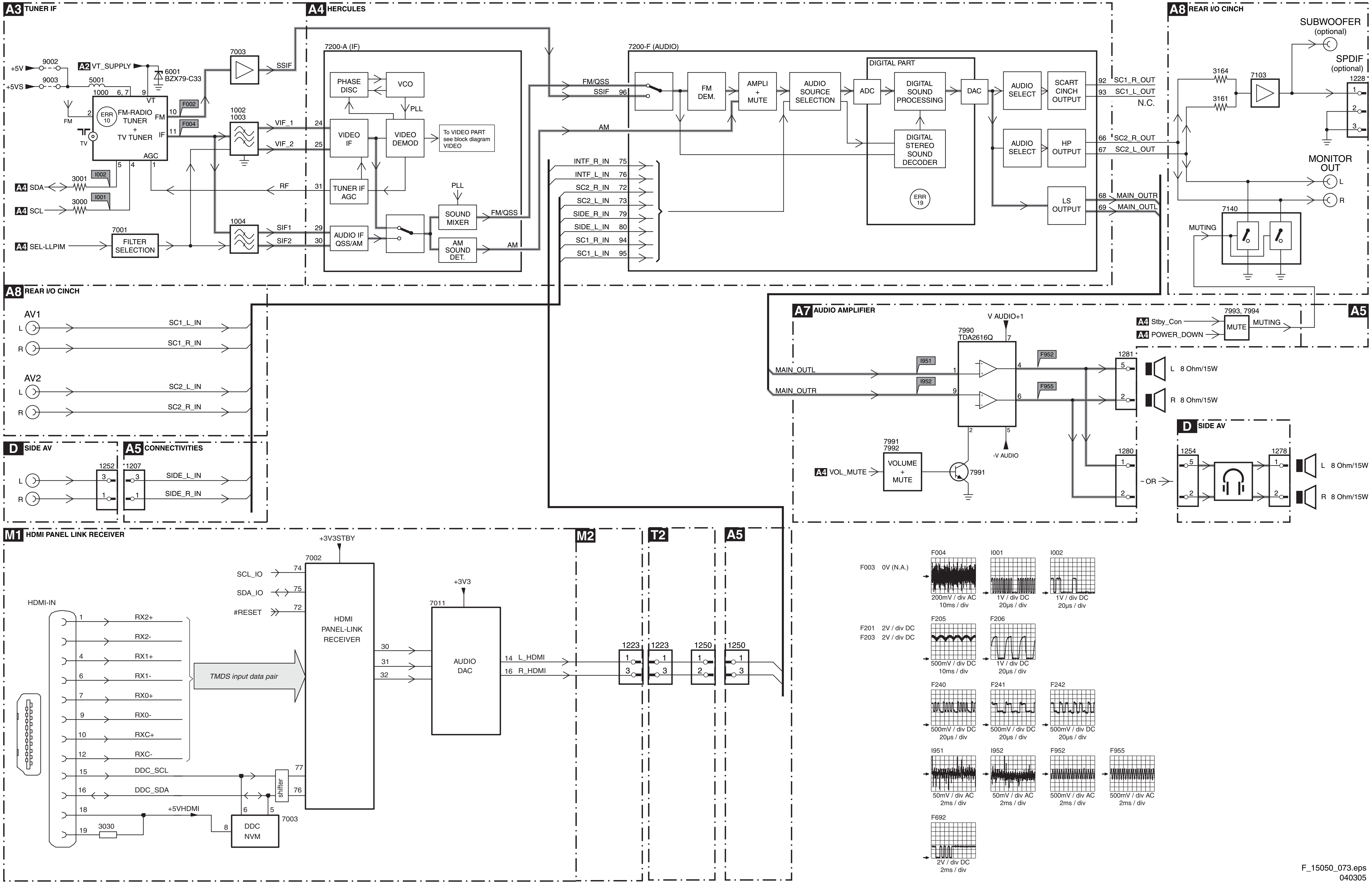
Testpoint Overview HDMI Panel

F001 B1	F009 A1	F014 A1	F021 A2	F027 A2	F034 A1	F041 A2	F055 B1	F060 B2	F065 A2	F082 A3	F087 A3
F004 A3	F010 A1	F015 A2	F022 A2	F030 A2	F035 B1	F051 B3	F056 A1	F061 B1	F066 B2	F083 A3	F088 A3
F005 A2	F011 B3	F016 B2	F023 A1	F031 B1	F036 A3	F052 B1	F057 B2	F062 B3	F067 B2	F084 B3	F089 A1
F006 A2	F012 B1	F019 A2	F024 A2	F032 B1	F038 A2	F053 A2	F058 A2	F063 B3	F080 A3	F085 A3	F090 A1
F008 A1	F013 A1	F020 A2	F026 A2	F033 B1	F040 A2	F054 B2	F059 B2	F064 B2	F081 A3	F086 A3	



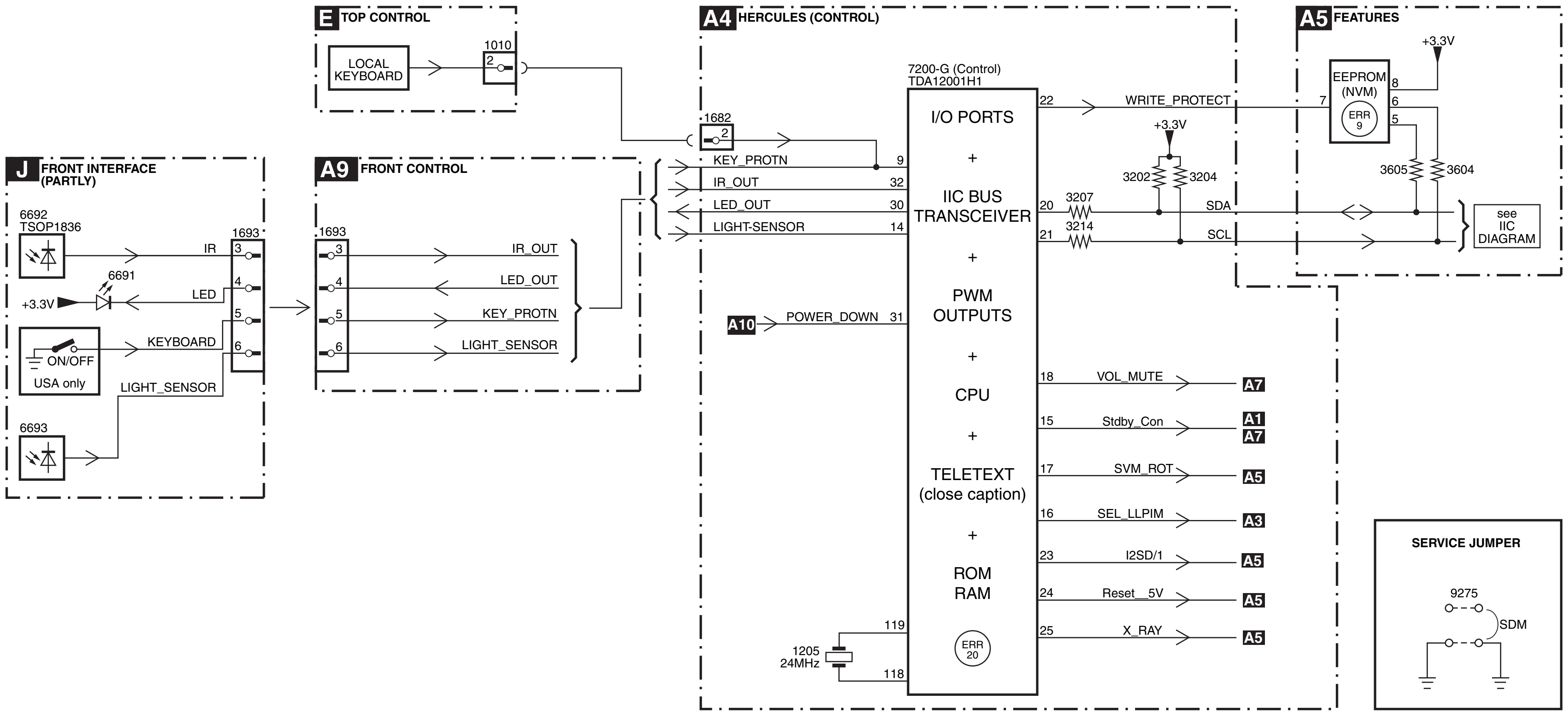
Block Diagram Audio

AUDIO

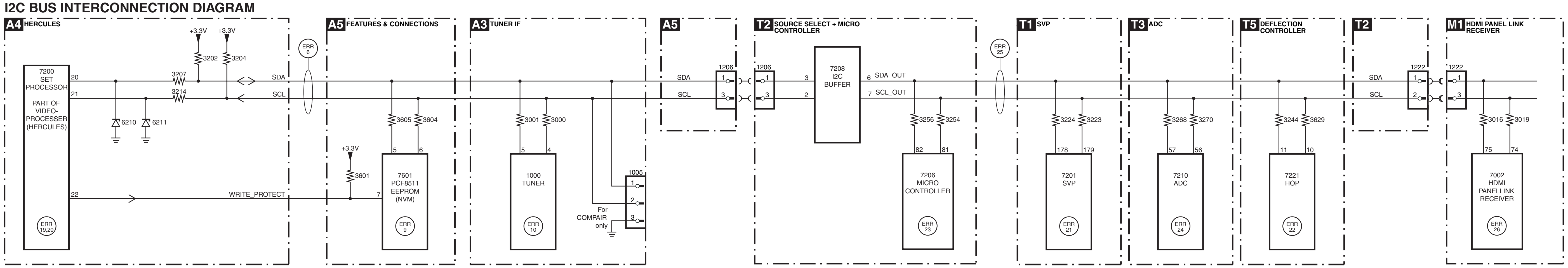


Block Diagram Control & I2C Overview

CONTROL



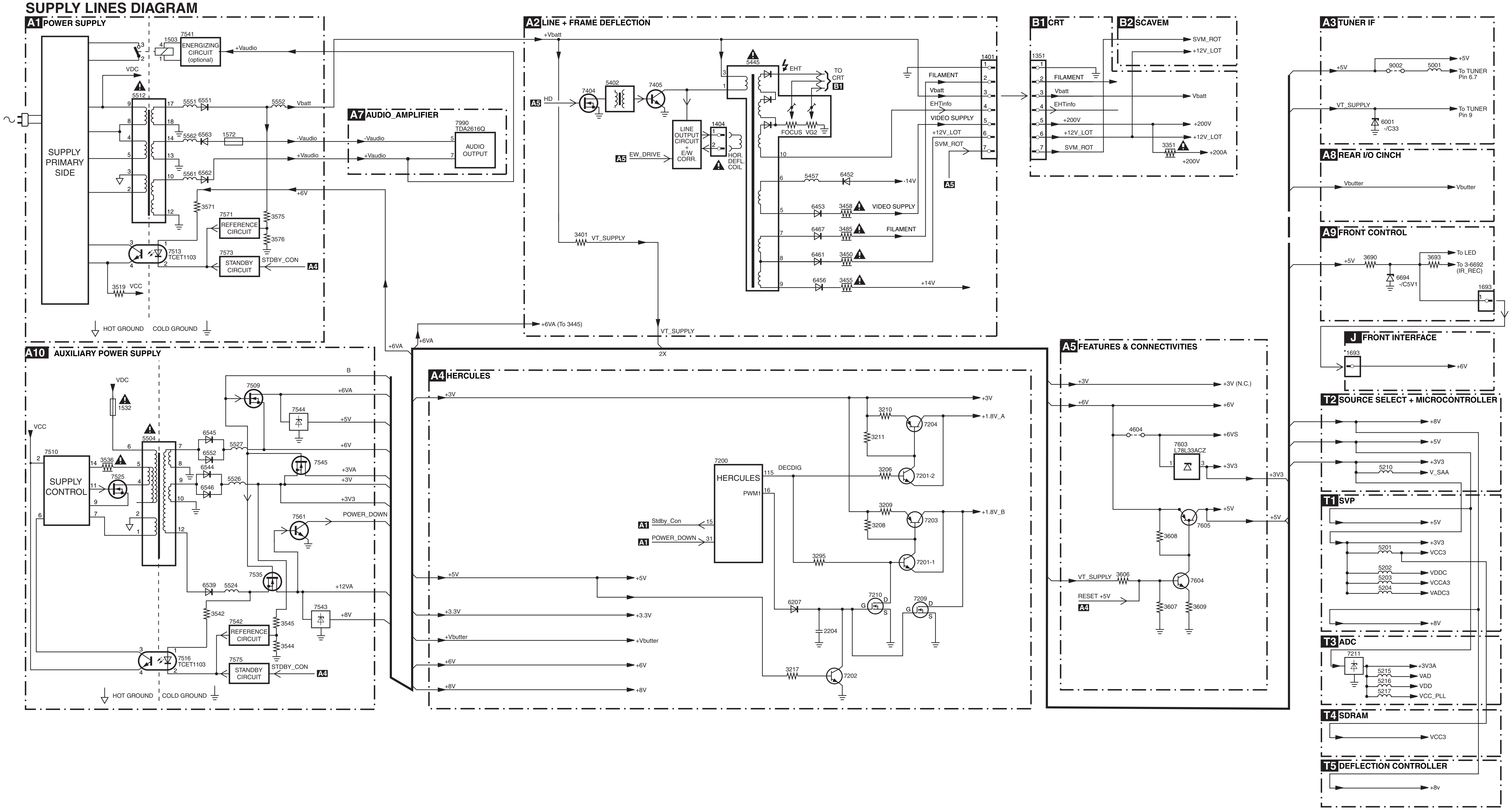
I2C BUS INTERCONNECTION DIAGRAM



F_15050_075.eps
040305

Supply Lines Overview

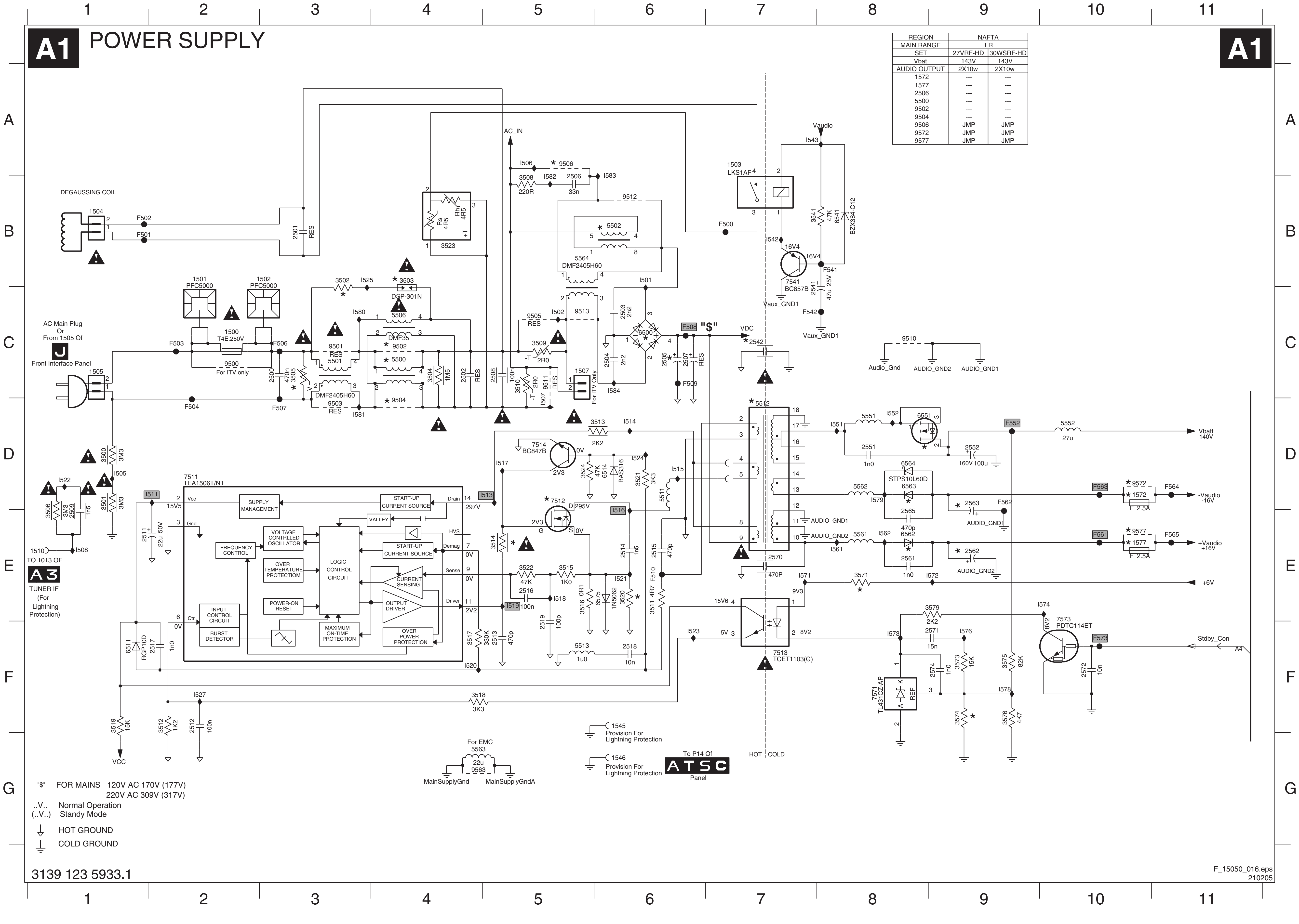
SUPPLY LINES DIAGRAM



F_15050_074.eps
030305

7. Circuit Diagrams and PWB Layouts

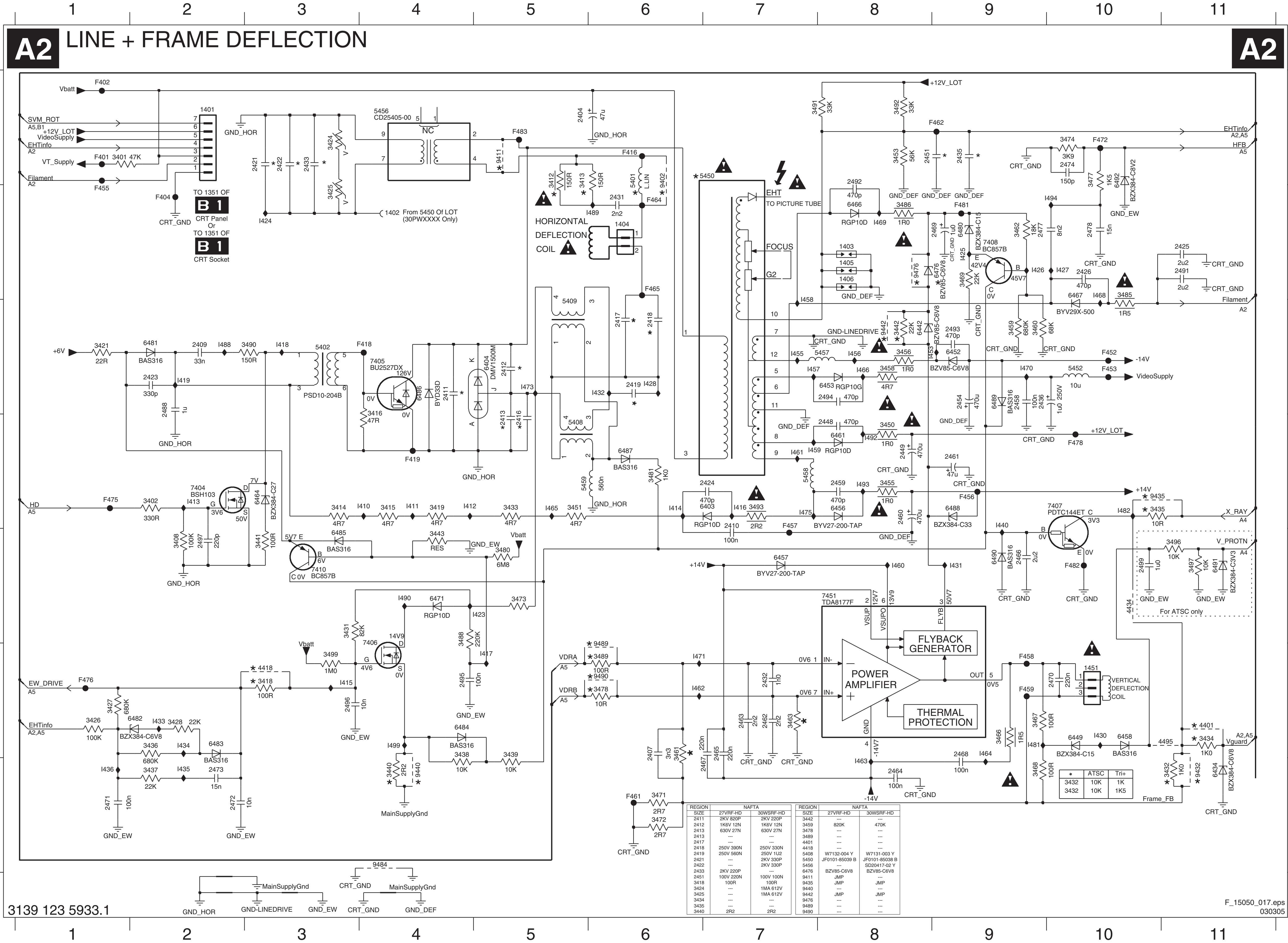
Mono Carrier: Power Supply



REGION	NAFTA	
MAIN RANGE	LR	
SET	27VRF-HD	30WSRF-HD
Vbat	143V	143V
AUDIO OUTPUT	2X10w	2X10w
1572	---	---
1577	---	---
2506	---	---
5500	---	---
9502	---	---
9504	---	---
9506	JMP	JMP
9572	JMP	JMP
9577	JMP	JMP

1500 C2
1501 B2
1502 B3
1503 A7
1504 B1
1505 C1
1507 C5
1510 E1
1545 F6
1546 G6
1572 D10
1577 E10
2500 C3
2501 B3
2502 C4
2503 C6
2504 C6
2505 C6
2506 B5
2507 C6
2508 C5
2509 E1
2511 E1
2512 F2
2513 F5
2514 E6
2515 E6
2516 E5
2517 F2
2518 F6
2519 F5
2541 C7
2542 C7
2551 D8
2552 D9
2561 E8
2562 E9
2563 D9
2565 E8
2570 E7
2571 F9
2572 F10
2574 F9
3500 D1
3501 D1
3502 B3
3503 B4
3504 C4
3505 C3
3506 E1
3508 B5
3509 C5
3510 C5
3511 E6
3512 F2
3513 D6
3514 E5
3515 E5
3516 E5
3517 F4
3518 F4
3519 F1
3520 E6
3521 D6
3522 E5
3523 B4
3524 D5
3541 B7
3571 E8
3573 F9
3574 F9
3575 F9
3576 F9
3579 E9
5500 C4
5501 C3
5502 B6
5506 C4
5511 D6
5512 D7
5513 F5
5551 D8
5552 D10
5561 E8
5562 D8
5563 G4
5564 B5
6500 C6
6511 F1
6514 D6
6541 B8
6551 D8
6562 E8
6563 D8
6564 D8
6575 E6
7511 D2
7512 D5
7513 F7
7514 D5
7541 B7
7571 F8
7573 F10
9500 C2
9501 C3
9502 C4
9503 D3
9504 C4
9505 C5
9506 A5
9510 C8
9511 C5
9512 B6
9513 C5
9563 G4
9572 D10
9577 E10
F500 B7
F501 B1
F502 B1
F503 C2
F504 D2
F506 C3
F507 D3
F508 C6
F509 C6
F510 E6
F541 B8
F542 C7
F552 D9
F561 E10
F562 D9
F563 D10
F564 D11
F565 E11
F573 F10
I501 B6
I502 C5
I505 D1
I506 A5
I507 D5
I508 E1
I511 D2
I513 D5
I514 D6
I515 D6
I516 E6
I517 D5
I518 E5
I519 E5
I520 F4
I521 E6
I522 D1
I523 F6
I524 D6
I525 B3
I527 F2
I542 B7
I543 A7
I551 D8
I552 D8
I561 E8
I562 E8
I571 E7
I572 E9
I573 F8
I574 E10
I576 F9
I578 F9
I579 D8
I580 C3
I581 D3
I582 B5
I583 B6
I584 C6

Mono Carrier: Deflection

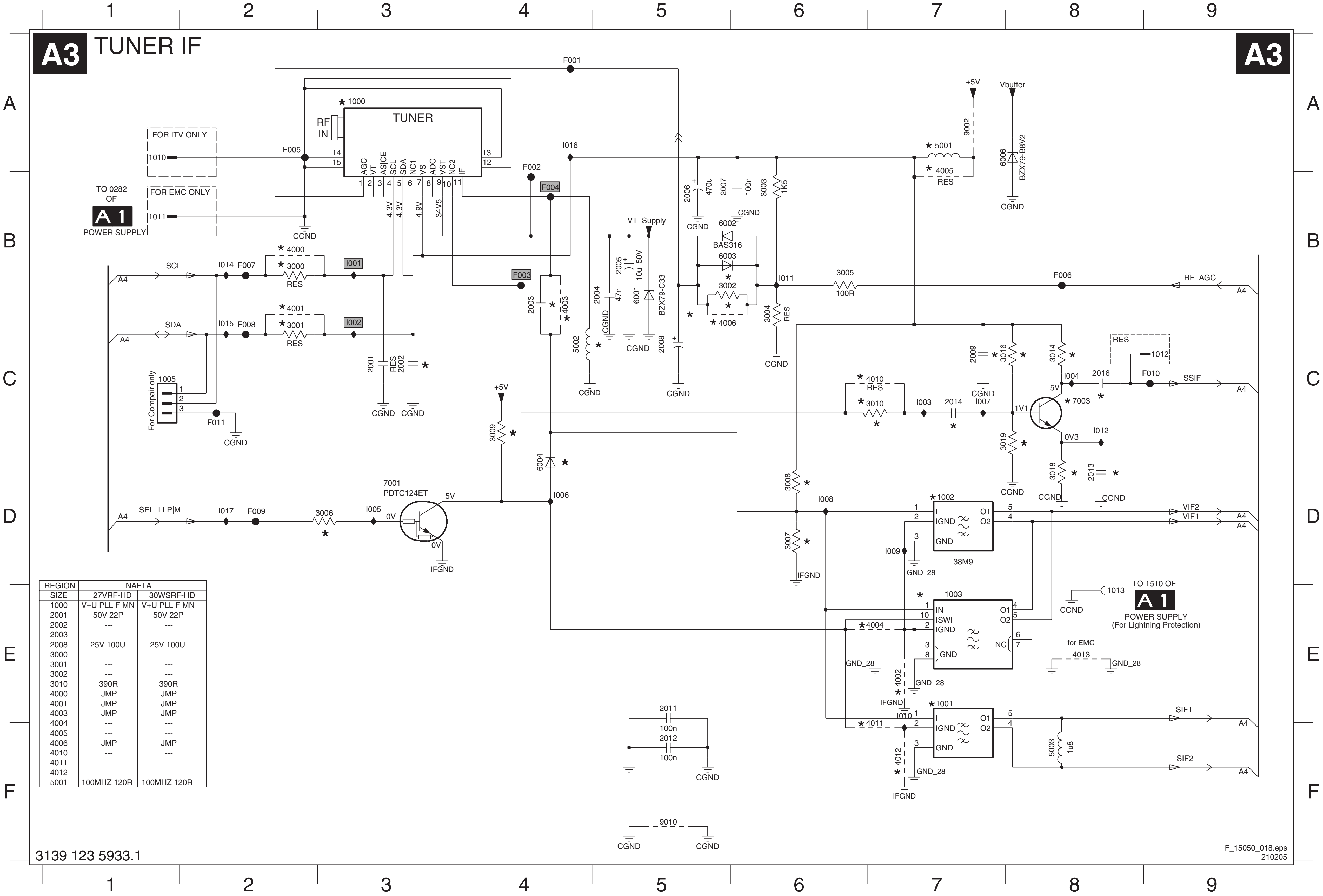


REGION	NAFTA	
SIZE	27VRF-HD	30WSRF-HD
2411	2KV 820P	2KV 220P
2412	1K6V 12N	1K6V 12N
2413	630V 27N	630V 27N
2413	---	---
2417	---	---
2418	250V 390N	250V 330N
2419	250V 560N	250V 1U2
2421	---	2KV 330P
2422	---	2KV 330P
2433	2KV 220P	---
2451	100V 220N	100V 100N
3418	100R	100R
3424	---	1MA 612V
3425	---	1MA 612V
3434	---	---
3435	---	---
3440	2R2	2R2

REGION	NAFTA	
SIZE	27VRF-HD	30WSRF-HD
3442	---	---
3459	820K	470K
3478	---	---
3489	---	---
4401	---	---
4418	---	---
5408	W7132-004 Y	W7131-003 Y
5450	JF0101-85039 B	JF0101-85038 B
5456	---	SD20417-02 Y
6476	BZV85-C6V8	BZV85-C6V8
9411	JMP	---
9435	JMP	JMP
9440	---	---
9442	JMP	JMP
9476	---	---
9489	---	---
9490	---	---

1401 A2
1402 B4
1403 B8
1404 B6
1405 B8
1406 B8
1451 F10
2404 A5
2407 F6
2409 C2
2410 D7
2411 C4
2412 C5
2413 D5
2416 D5
2417 C6
2418 C6
2419 C6
2421 A3
2422 A3
2423 C2
2424 D7
2425 B11
2426 B10
2431 B6
2432 F7
2433 A3
2435 A9
2436 C9
2448 D8
2449 D8
2451 A8
2454 C9
2458 C9
2459 D8
2460 D8
2461 D9
2462 F7
2463 F7
2464 G8
2465 F7
2466 E9
2467 G7
2468 F9
2469 B9
2470 F10
2471 G1
2472 G2
2473 G2
2474 A10
2477 B9
2478 B10
2488 C2
2491 B11
2492 A8
2493 C9
2494 C8
2495 F4
2496 F3
2497 E2
2499 E10
3401 A1
3402 D2
3408 E2
3412 A5
3413 A5
3414 D3
3415 D4
3416 C4
3418 F3
3419 D4
3421 C1
3424 A3
3425 A3
3426 F1
3427 F1
3428 F2
3431 E3
3432 G11
3433 D5
3434 F11
3435 D10
3436 F2
3437 G2
3438 F4
3439 F5
3440 G4
3441 E3
3442 C8
3443 E4
3450 D8
3451 D5
3453 A8
3455 D8
3456 C8
3458 C8
3459 C9
3460 C9
3461 F6
3462 B9
3463 F7
3466 F9
3467 F9
3468 G9
3469 B9
3471 G6
3472 G6
3473 E5
3474 A10
3477 B10
3478 F6
3480 E5
3481 D6
3485 B10
3486 B8
3488 E4
3489 F6
3490 C3
3491 A7
3492 A8
3493 D7
3496 E11
3497 E11
3499 F3
4401 F11
4418 F3
4434 E10
4495 F11
5401 A6
5402 C3
5408 D5
5409 B5
5450 A6
5452 C10
5456 A4
5457 C8
5458 D7
5459 D5
6403 D7
6404 C5
6434 G11
6442 C8
6449 F10
6452 C9
6453 C8
6456 D8
6457 E7
6458 F10
6461 D8
6464 D3
6466 B8
6467 B10
6471 E4
6476 B9
6480 B9
6481 C2
6482 F2
6483 F2
6484 F4
6485 E3
6486 C4
6487 D6
6488 D9
6489 C9
6490 E9
6491 E11
6492 A10
7404 D2
7405 C4
7406 F4
7407 D10
7408 B9
7410 E3
7451 E8
9402 A6
9411 A5
9432 G11
9435 D10
9440 G4
9442 C8
9476 B8
9484 G4
9489 F6
9490 F6
F401 A1
F402 A1
F404 B2
F416 A6
F418 C4
F419 D4
F452 C10
F453 C10
F455 B1
F456 D9
F457 D7
F458 F9
F459 F9
F461 G6
F462 A9
F464 B6
F465 B6
F472 A10
F475 D1
F476 F1
F478 D10
F481 B9
F482 E10
F483 A5
I410 D4
I411 D4
I412 D4
I413 D2
I414 D6
I415 F3
I416 D7
I417 F5
I418 C3
I419 C2
I423 E5
I424 B3
I425 B9
I426 B9
I427 B10
I428 C6
I430 F10
I431 E9
I432 C6
I433 F2
I434 F2
I435 G2
I436 G1
I440 D9
I453 C8
I455 C7
I456 C8
I457 C7
I458 B7
I459 D7
I460 E8
I461 D7
I462 F6
I463 G8
I464 F9
I465 D5
I466 C8
I468 B10
I469 B8
I470 C9
I471 F6
I473 C5
I475 D7
I481 F9
I482 D10
I488 C2
I489 B6
I490 E4
I492 D8
I493 D8
I494 B10
I499 F4

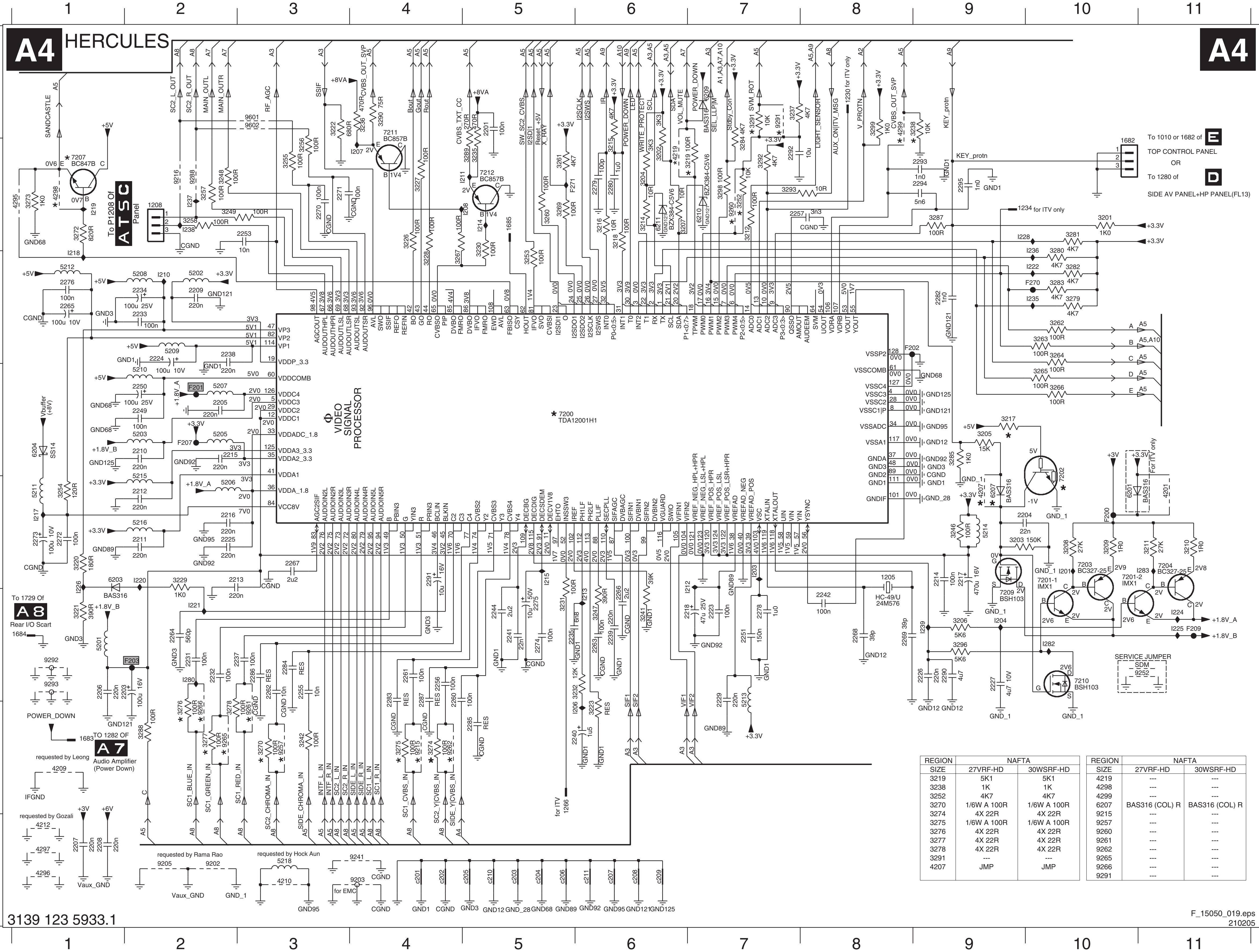
Mono Carrier: Tuner IF



REGION	NAFTA	
SIZE	27VRF-HD	30WSRF-HD
1000	V+U PLL F MN	V+U PLL F MN
2001	50V 22P	50V 22P
2002	---	---
2003	---	---
2008	25V 100U	25V 100U
3000	---	---
3001	---	---
3002	---	---
3010	390R	390R
4000	JMP	JMP
4001	JMP	JMP
4003	JMP	JMP
4004	---	---
4005	---	---
4006	JMP	JMP
4010	---	---
4011	---	---
4012	---	---
5001	100MHZ 120R	100MHZ 120R

1000 A3
1001 E7
1002 D7
1003 E7
1005 C1
1010 A1
1011 B1
1012 C9
1013 E8
2001 C3
2002 C3
2003 B4
2004 B5
2005 B5
2006 B5
2007 B5
2008 C5
2009 C7
2011 E5
2012 F5
2013 D8
2014 C7
2016 C8
3000 B2
3001 C2
3002 B5
3003 B6
3004 C6
3005 B6
3006 D3
3007 D6
3008 D6
3009 C4
3010 C7
3014 C8
3016 C8
3018 D8
3019 C8
4000 B2
4001 C2
4002 E7
4003 B4
4004 E7
4005 B7
4006 C5
4010 C7
4011 F7
4012 F7
4013 E8
5001 A7
5002 C4
5003 F8
6001 B5
6002 B5
6003 B5
6004 D4
6006 A7
7001 D3
7003 C8
9002 A7
9010 F5
F001 A4
F002 A4
F003 B4
F004 B4
F005 A2
F006 B8
F007 B2
F008 C2
F009 D2
F010 C9
F011 C2
I001 B3
I002 C3
I003 C7
I004 C8
I005 D3
I006 D4
I007 C7
I008 D6
I009 D7
I010 E7
I011 B6
I012 C8
I014 B2
I015 C2
I016 A4
I017 D2

Mono Carrier: Hercules



REGION	NAFTA	
SIZE	27VRF-HD	30WSRF-HD
3219	5K1	5K1
3238	1K	1K
3252	4K7	4K7
3270	1/6W A 100R	1/6W A 100R
3274	4X 22R	4X 22R
3275	1/6W A 100R	1/6W A 100R
3276	4X 22R	4X 22R
3277	4X 22R	4X 22R
3278	4X 22R	4X 22R
3291	---	---
4207	JMP	JMP

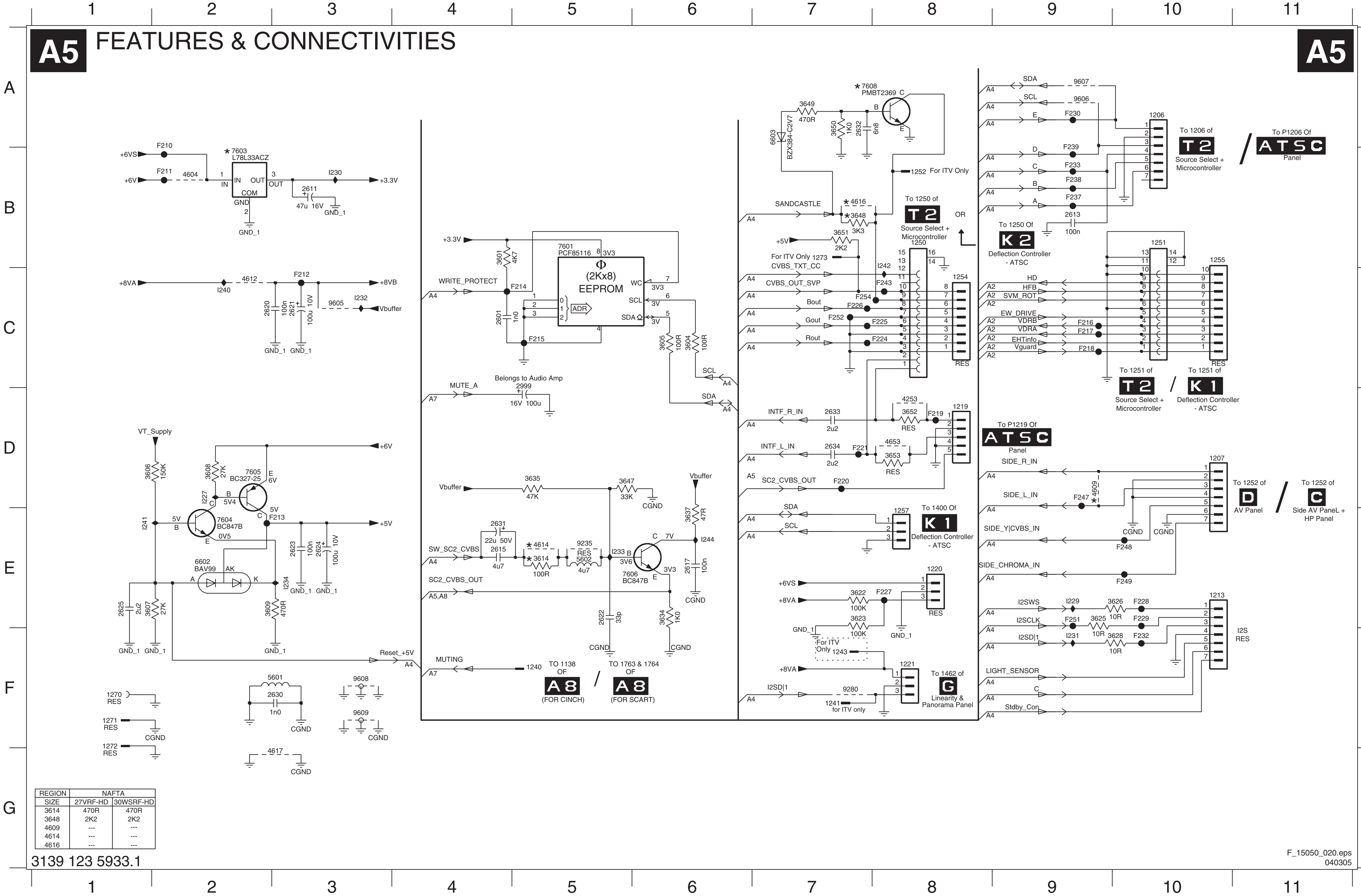
REGION	NAFTA	
SIZE	27VRF-HD	30WSRF-HD
4219	---	---
4298	---	---
4299	---	---
6207	BAS316 (COL) R	BAS316 (COL) R
9215	---	---
9257	---	---
9260	---	---
9261	---	---
9262	---	---
9265	---	---
9266	---	---
9291	---	---

1205 E8
1208 B2
1230 A8
1234 B10
1266 G5
1682 B10
1683 G1
1684 F1
1685 B5
2201 A5
2203 F2
2204 E9
2205 D2
2206 F1
2207 H1
2208 H1
2209 C2
2210 D2
2211 E2
2212 E2
2213 E2
2214 E9
2215 D2
2216 E2
2217 E9
2218 F7
2223 F7
2224 C2
2225 E2
2226 F9
2227 F9
2229 F7
2231 F2
2232 F2
2233 C2
2234 C2
2235 F5
2237 F3
2238 C2
2239 F6
2240 G6
2241 F5
2242 F8
2244 F5
2249 D2
2250 D2
2251 F7
2253 B3
2255 F3
2256 F4
2257 B7
2260 F4
2261 F4
2262 F3
2263 F6
2264 F2
2265 C1
2266 F6
2267 E3
2268 F8
2269 F8
2270 B3
2271 B3
2272 E1
2273 E1
2274 F5
2275 F5
2276 C1
2278 F7
2279 B6
2280 B6
2282 C9
2283 F4
2284 F3
2285 G5
2286 F3
2287 F4
2290 F9
2291 E4
2292 B7
2293 B9
2294 B9
2295 B9
3201 B10
3202 B6
3203 E9
3204 B6
3205 D9
3206 F9
3207 B6
3208 E10
3209 E10
3210 E11
3211 E11
3212 B7
3214 B6

3215 B6
3216 B6
3217 D9
3218 B6
3219 B7
3220 E1
3221 F1
3222 A3
3223 G6
3226 B4
3227 B4
3228 C4
3229 E2
3230 B5
3231 F5
3232 F6
3235 B5
3236 A4
3237 A7
3238 A9
3241 F6
3242 G3
3246 E9
3247 F6
3248 B2
3249 B2
3252 B7
3253 C5
3254 E1
3255 B3
3256 B3
3257 B2
3258 B2
3260 B5
3261 B5
3262 C10
3263 C10
3264 C10
3265 D10
3266 D10
3267 C4
3269 B5
3270 G3
3272 B1
3273 B1
3274 G4
3275 G4
3276 G2
3277 G2
3278 G2
3279 C10
3280 C10
3281 B10
3282 C10
3283 C10
3284 B7
3285 D9
3287 B9
3288 G2
3289 B5
3290 A4
3291 A7
3292 B7
3293 B7
3296 F9
3298 B7
3299 A8
4201 E11
4207 E9
4209 G1
4210 H3
4212 H1
4219 B6
4295 B1
4296 H1
4297 H1
4298 B1
4299 A8
5201 F1
5202 C2
5203 D2
5205 D2
5206 E2
5207 D2
5208 C2
5209 C2
5210 D2
5211 E1
5212 C1
5213 F7
5214 E9
5215 E2
5216 E2
5218 H3
6201 E10
6203 E1

6204 D1
6207 E9
6209 A7
6210 B7
6211 B6
7200 D5
7201-1 E10
7201-2 E10
7202 D10
7203 E10
7204 E11
7207 B1
7209 F9
7210 F10
7211 A4
7212 B5
9202 H2
9203 H4
9205 H2
9215 G4
9216 B2
9241 H4
9257 G3
9260 B7
9261 G3
9262 G4
9265 G2
9266 G2
9288 B2
9291 A7
9292 F1
9293 F1
9601 A3
9602 A3
F200 E10
F201 D2
F202 C8
F203 F2
F207 D2
F209 F11
F270 C10
F271 B5
I201 E10
I203 E7
I204 F9
I206 G5
I207 B4
I208 B5
I210 C2
I211 B4
I212 E6
I213 F6
I214 B5
I215 E5
I217 E1
I218 C1
I219 B1
I220 E2
I221 F2
I222 C10
I224 F11
I225 F11
I226 E1
I228 B9
I235 C10
I236 B10
I237 B2
I238 B2
I239 F9
I280 F2
I282 F10
I283 E11
c201 H4
c202 H4
c203 H5
c204 H5
c205 H5
c206 H5
c207 H6
c208 H6
c209 H6
c210 H5
c211 H6

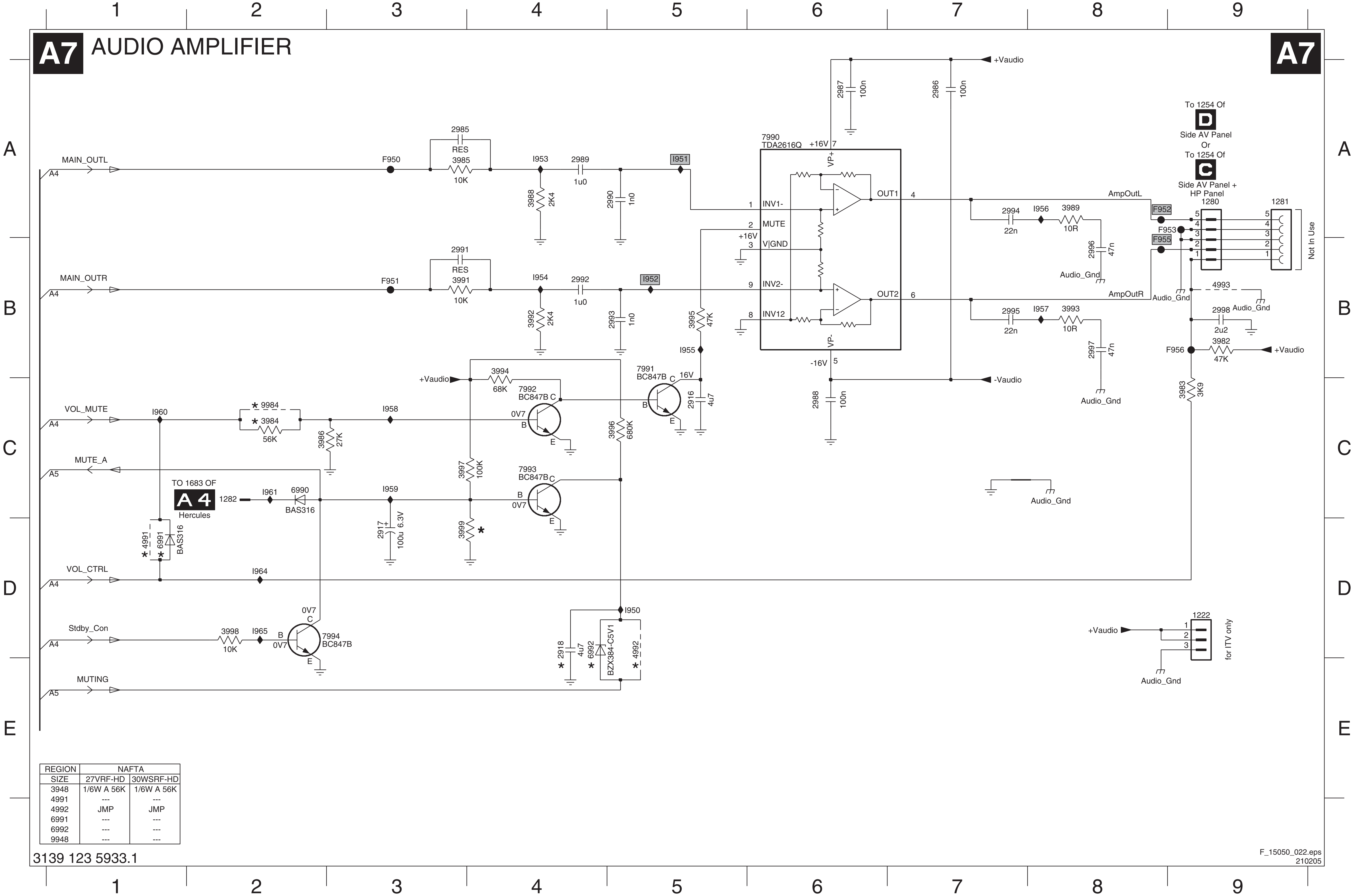
Mono Carrier: Features & Connectivities



REGION	NAFTA	
SIZE	27VRF-HD	30WSRF-HD
3614	470R	470R
3648	2K2	2K2
4609	---	---
4614	---	---
4616	---	---

1206 A10
1207 D10
1213 E10
1219 D8
1220 E8
1221 F8
1240 F5
1241 F7
1243 F7
1250 B8
1251 B10
1252 B8
1254 C8
1255 B10
1257 E8
1270 F1
1271 F1
1272 G1
1273 B7
2601 C4
2611 B3
2613 B9
2615 E4
2617 E6
2620 C2
2621 C3
2622 E5
2623 E3
2624 E3
2625 E1
2630 F3
2631 E4
2632 A7
2633 D7
2634 D7
2999 D5
3601 B4
3604 C6
3605 C6
3606 D1
3607 E1
3608 D2
3609 E2
3614 E5
3622 E7
3623 E7
3625 E9
3626 E10
3628 F10
3634 E6
3635 D5
3637 E6
3647 D5
3648 B7
3649 A7
3650 A7
3651 B7
3652 D8
3653 D8
4253 D8
4604 B2
4609 D9
4612 C2
4614 E5
4616 B7
4617 G3
4653 D8
5601 F3
5602 E5
6602 E2
6603 A7
7601 B5
7603 B2
7604 E2
7605 D2
7606 E5
7608 A7
9235 E5
9280 F7
9605 C3
9606 A9
9607 A9
9608 F3
9609 F3
F210 B2
F211 B2
F212 C3
F213 E3
F214 C5
F215 C5
F216 C9
F217 C9
F218 C9
F219 D8
F220 D7
F221 D7
F224 C8
F225 C8
F226 C7
F227 E8
F228 E10
F229 E10
F230 A9
F232 F10
F233 B9
F237 B9
F238 B9
F239 B9
F243 C8
F247 D9
F248 E10
F249 E10
F251 E9
F252 C7
F254 C7
I227 D2
I229 E9
I230 B3
I231 F9
I232 C3
I233 E5
I234 E3
I240 C2
I241 E1
I242 B8
I244 E6

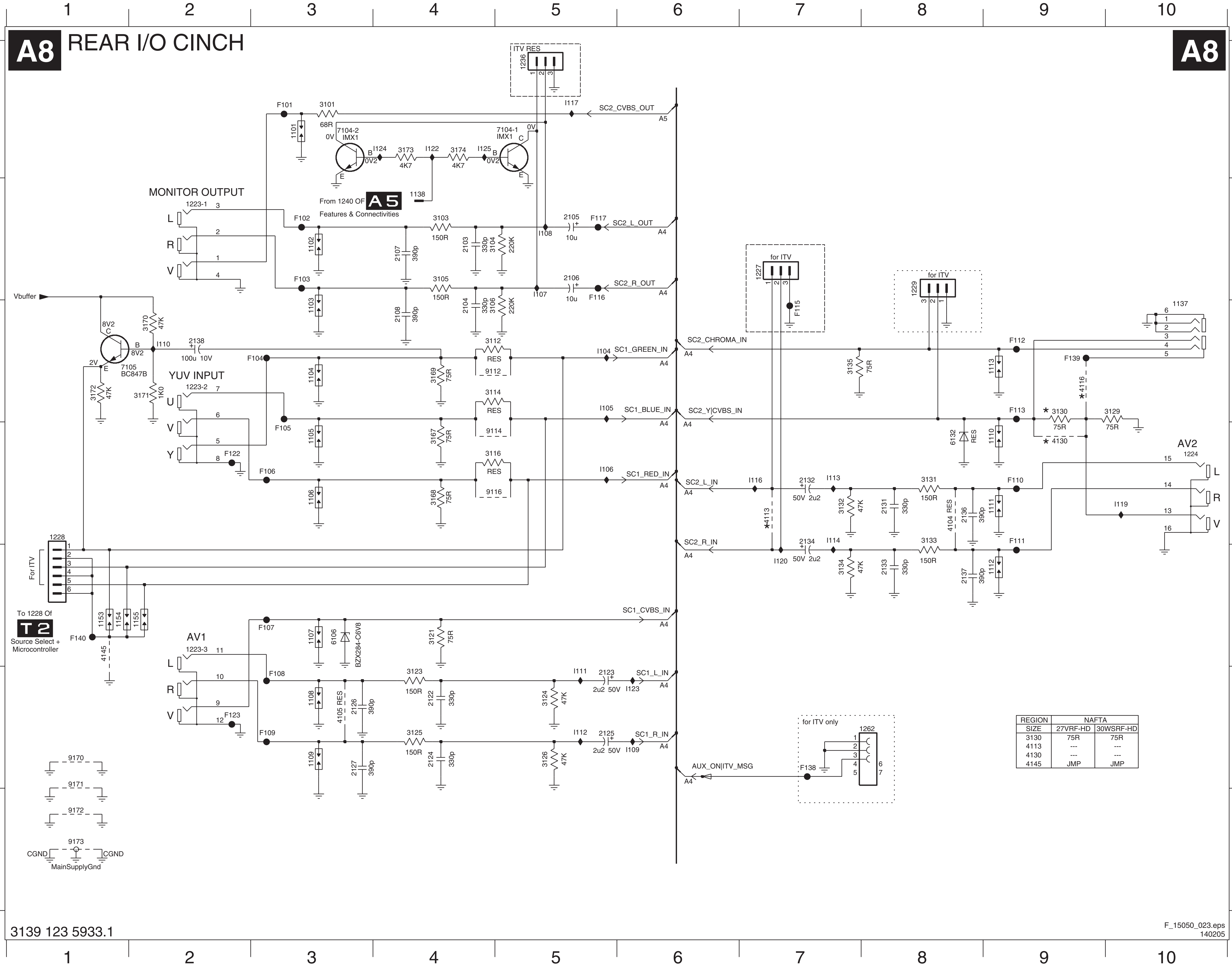
Mono Carrier: Audio Amplifier



REGION	NAFTA	
SIZE	27VRF-HD	30WSRF-HD
3948	1/6W A 56K	1/6W A 56K
4991	---	---
4992	JMP	JMP
6991	---	---
6992	---	---
9948	---	---

1222 D9
1280 A9
1281 A9
1282 C2
2916 C5
2917 D3
2918 D4
2985 A3
2986 A7
2987 A6
2988 C6
2989 A4
2990 A5
2991 B3
2992 B4
2993 B5
2994 A7
2995 B7
2996 B8
2997 B8
2998 B9
3982 B9
3983 C9
3984 C2
3985 A3
3986 C2
3988 A4
3989 A8
3991 B3
3992 B4
3993 B8
3994 B4
3995 B5
3996 C5
3997 C3
3998 D2
3999 D3
4991 D1
4992 D5
4993 B9
6990 C2
6991 D1
6992 D4
7990 A6
7991 B5
7992 C4
7993 C4
7994 D2
9984 C2
F950 A3
F951 B3
F952 A8
F953 A8
F955 B8
F956 B9
I950 D5
I951 A5
I952 B5
I953 A4
I954 B4
I955 B5
I956 A8
I957 B8
I958 C3
I959 C3
I960 C1
I961 C2
I964 D2
I965 D2

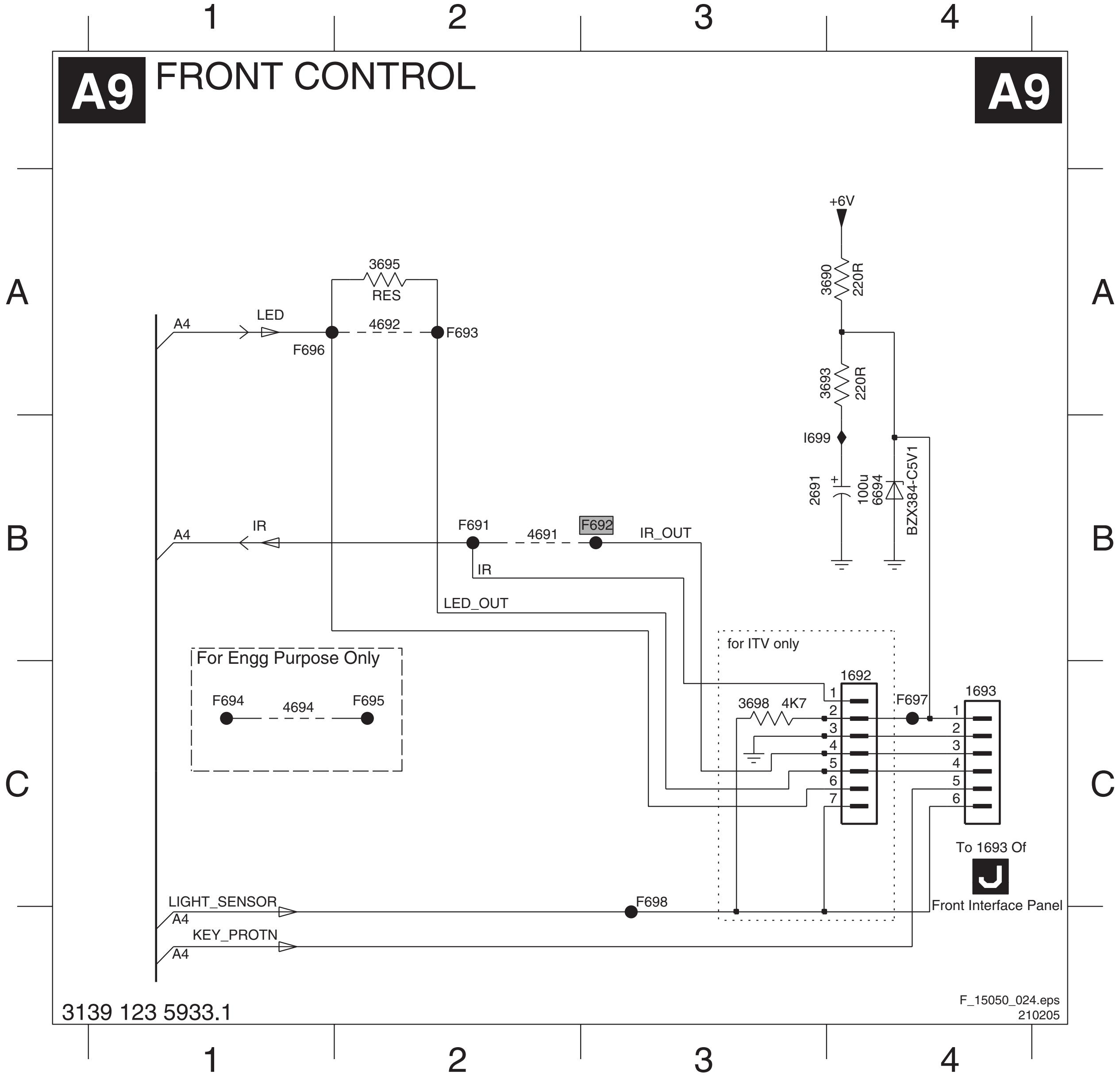
Mono Carrier: Rear I/O Cinch



REGION	NAFTA	
SIZE	27VRF-HD	30WSRF-HD
3130	75R	75R
4113	---	---
4130	---	---
4145	JMP	JMP

1101 A3
1102 B3
1103 C3
1104 C3
1105 D3
1106 D3
1107 E3
1108 F3
1109 F3
1110 D9
1111 D9
1112 E9
1113 C9
1137 C10
1138 B4
1153 E1
1154 E1
1155 E2
1223-1 B2
1223-2 C2
1223-3 E2
1227 B7
1228 D1
1229 B8
1236 A5
1262 F7
2103 B4
2104 C4
2105 B5
2106 B5
2107 B4
2108 C4
2122 F4
2123 F5
2124 F4
2125 F5
2126 F3
2127 F3
2131 D8
2132 D7
2133 E8
2134 D7
2136 D8
2137 E8
2138 C2
3101 A3
3103 B4
3104 B4
3105 B4
3106 C4
3112 C4
3114 C4
3116 D4
3121 E4
3123 F4
3124 F5
3125 F4
3126 F5
3129 C10
3130 C9
3131 D8
3132 D7
3133 D8
3134 E7
3135 C7
3167 D4
3168 D4
3169 C4
3170 C2
3171 C2
3172 C1
3173 A4
3174 A4
4104 D8
4105 F3
4113 D7
4116 C9
4130 D9
4145 E1
6106 E3
6132 D8
7104-1 A5
7104-2 A3
7105 C2
9112 C4
9114 D4
9116 D4
9170 G1
9171 G1
9172 G1
9173 G1
F101 A3
F102 B3
F103 B3
F104 C3
F105 D3
F106 D3
F107 E3
F108 F3
F109 F3
F110 D9
F111 D9
F112 C9
F113 C9
F115 C7
F116 B5
F117 B5
F122 D2
F123 F2
F138 F7
F139 C9
F140 E1
I104 C5
I105 C5
I106 D5
I107 B5
I108 B5
I109 F6
I110 C2
I111 F5
I112 F5
I113 D7
I114 D7
I116 D7
I117 A5
I119 D10
I120 E7
I122 A4
I123 F6
I124 A4
I125 A4

Mono Carrier: Front Control

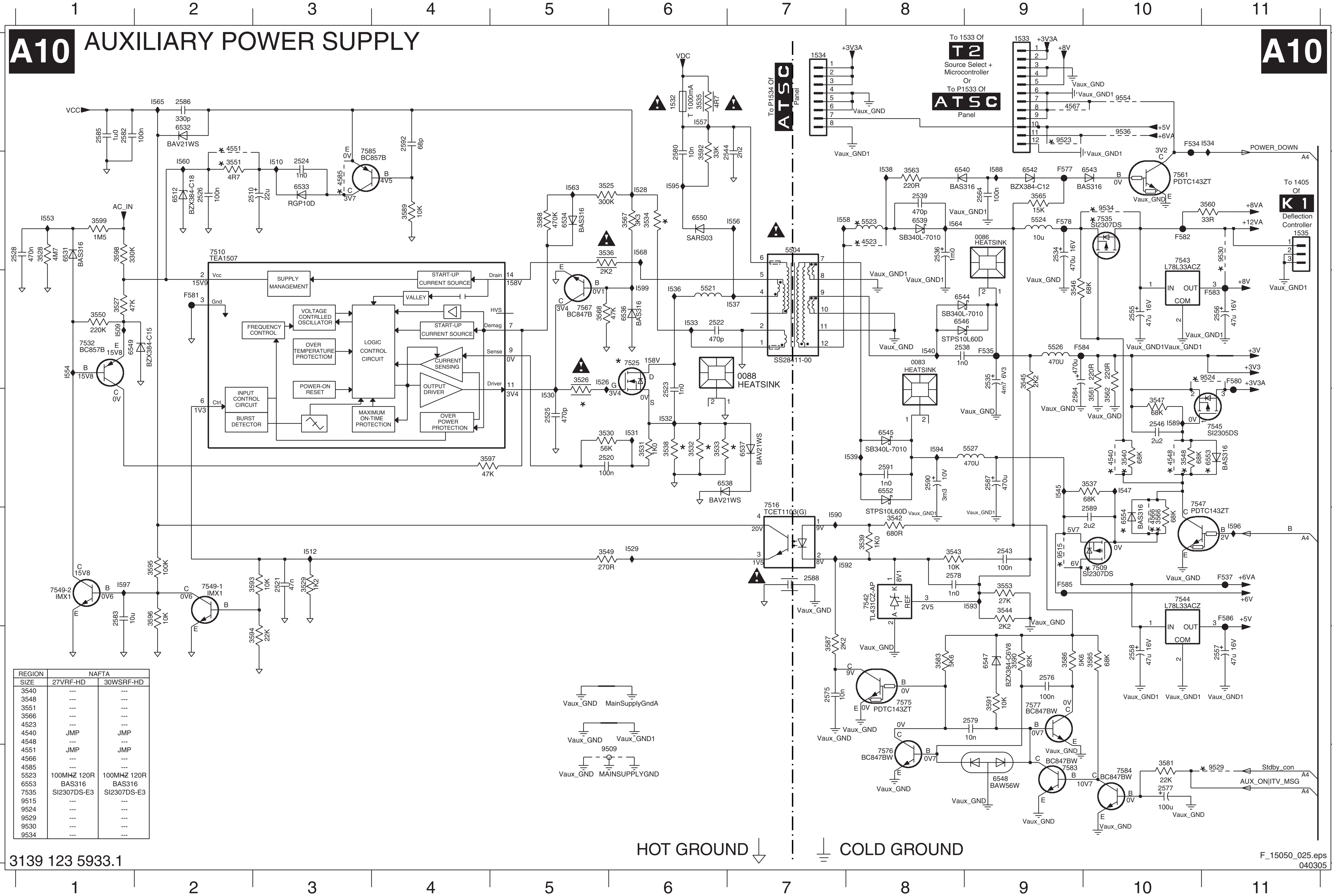


1692 C4
1693 C4
2691 B3
3690 A4
3693 A4
3695 A2
3698 C3
4691 B2
4692 A2
4694 C1
6694 B4
F691 B2
F692 B3
F693 A2
F694 C1
F695 C2
F696 A1
F697 C4
F698 C3
I699 B3

Personal Notes:

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131004

Mono Carrier: AUX Power Supply

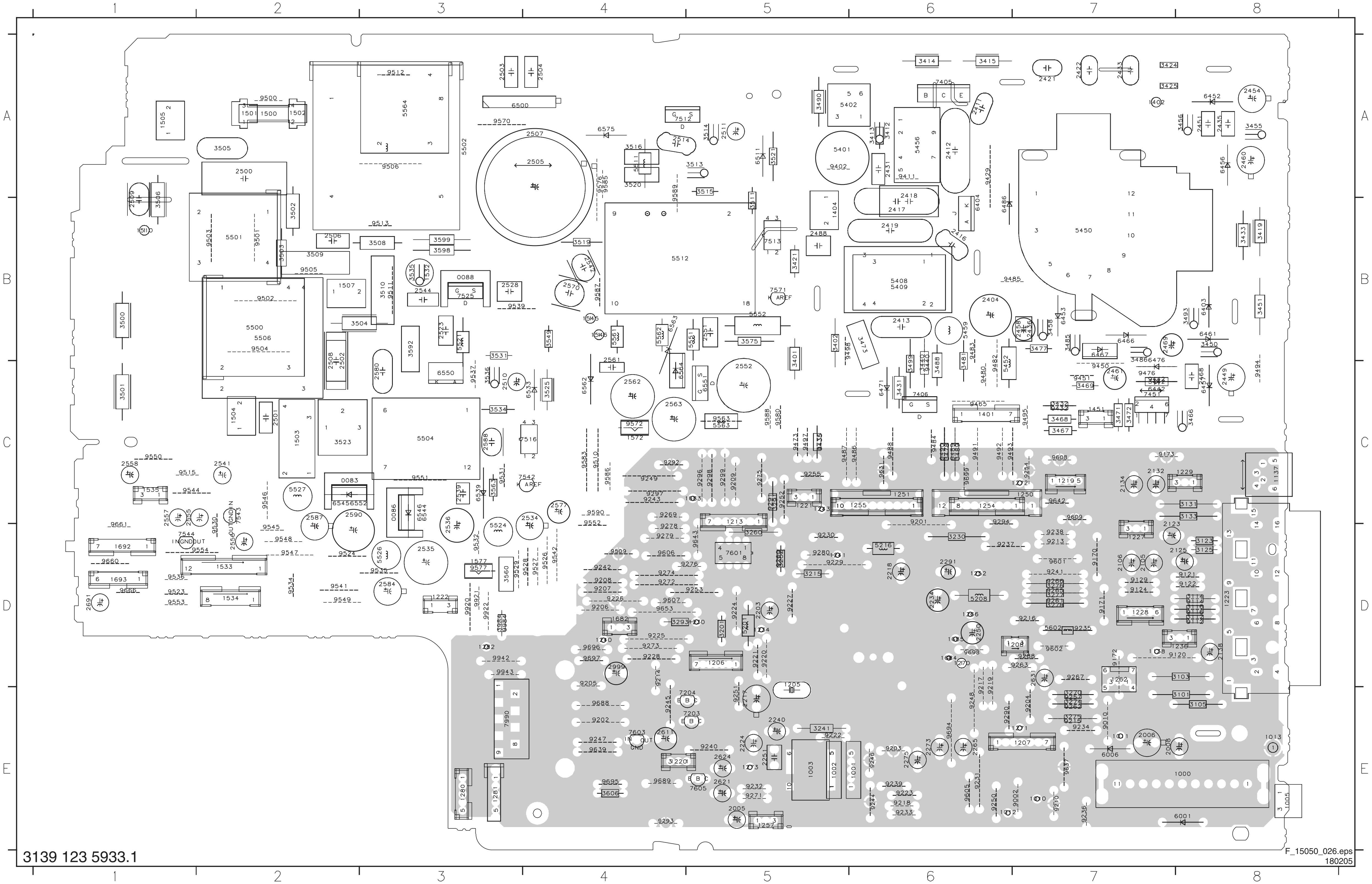


REGION	NAFTA	
SIZE	27VRF-HD	30WSRF-HD
3540	---	---
3548	---	---
3551	---	---
3566	---	---
4523	---	---
4540	JMP	JMP
4548	---	---
4551	JMP	JMP
4566	---	---
4585	---	---
5523	100MHZ 120R	100MHZ 120R
6553	BAS316	BAS316
7535	SI2307DS-E3	SI2307DS-E3
9515	---	---
9524	---	---
9529	---	---
9530	---	---
9534	---	---

0083 C8	3587 F7	F582 B10
0086 B9	3588 B5	F583 C11
0088 C7	3589 B4	F584 C9
1532 A6	3590 F9	F585 E9
1533 A9	3591 F9	F586 E11
1534 A7	3592 B6	I509 C1
1535 B11	3593 E3	I510 B3
2510 B3	3594 F3	I512 E3
2520 D5	3595 E2	I526 C5
2521 E3	3596 E2	I528 B6
2522 C6	3597 D4	I529 E6
2523 D6	3598 B1	I530 D5
2524 B3	3599 B1	I531 D6
2525 D5	4523 B8	I532 D6
2526 B2	4540 D10	I533 C6
2528 B1	4548 D10	I534 A11
2534 B9	4551 A2	I536 C6
2535 C9	4566 E10	I537 C7
2536 B8	4567 A9	I538 B8
2538 C8	4585 B3	I539 D8
2539 B8	5504 B7	I540 C8
2543 E9	5521 C6	I545 D9
2544 B7	5523 B8	I547 D10
2546 D10	5524 B9	I553 B1
2555 C10	5526 C9	I554 C1
2556 C11	5527 D9	I556 B7
2557 F11	6512 B2	I557 A6
2558 F10	6531 B1	I558 B7
2564 B9	6532 A2	I560 B2
2575 F7	6533 B3	I563 B5
2576 F9	6534 B5	I564 B8
2577 G10	6536 C6	I565 A2
2578 E8	6537 D7	I568 B6
2579 F9	6538 D6	I588 B9
2580 B6	6539 B8	I589 D10
2582 A1	6540 B8	I590 E7
2583 E1	6542 B9	I592 E7
2584 D9	6543 B10	I593 E9
2585 A1	6544 C8	I594 D8
2586 A2	6545 D8	I595 B6
2587 D9	6546 C8	I596 E11
2588 E7	6547 F9	I597 E1
2589 E10	6548 G9	I599 C6
2590 D8	6549 C1	
2591 D8	6550 B6	
2592 A4	6552 D8	
3525 B5	6553 D11	
3526 C5	6554 E10	
3527 C1	7509 E10	
3528 B1	7510 B2	
3529 E3	7516 E7	
3530 D5	7525 C6	
3531 D6	7532 C1	
3532 D6	7535 B10	
3533 D6	7542 E8	
3534 B6	7543 B10	
3535 A6	7544 E10	
3536 B5	7545 D11	
3537 D10	7547 D10	
3538 D6	7549-1 E2	
3539 E8	7549-2 E1	
3540 D10	7561 B10	
3542 E8	7567 C5	
3543 E8	7575 F8	
3544 E9	7576 G8	
3545 C9	7577 F9	
3546 C9	7583 G9	
3547 D10	7584 G10	
3548 D10	7585 B3	
3549 E5	9509 G5	
3550 C1	9515 E9	
3551 B2	9523 A9	
3553 E9	9524 C11	
3560 B11	9529 G11	
3561 D10	9530 B11	
3562 D10	9534 B10	
3563 B8	9536 A10	
3565 B9	9554 A10	
3566 E10	F534 A10	
3567 B6	F535 C9	
3568 C5	F537 E11	
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Layout Mono Carrier: (Top Side)

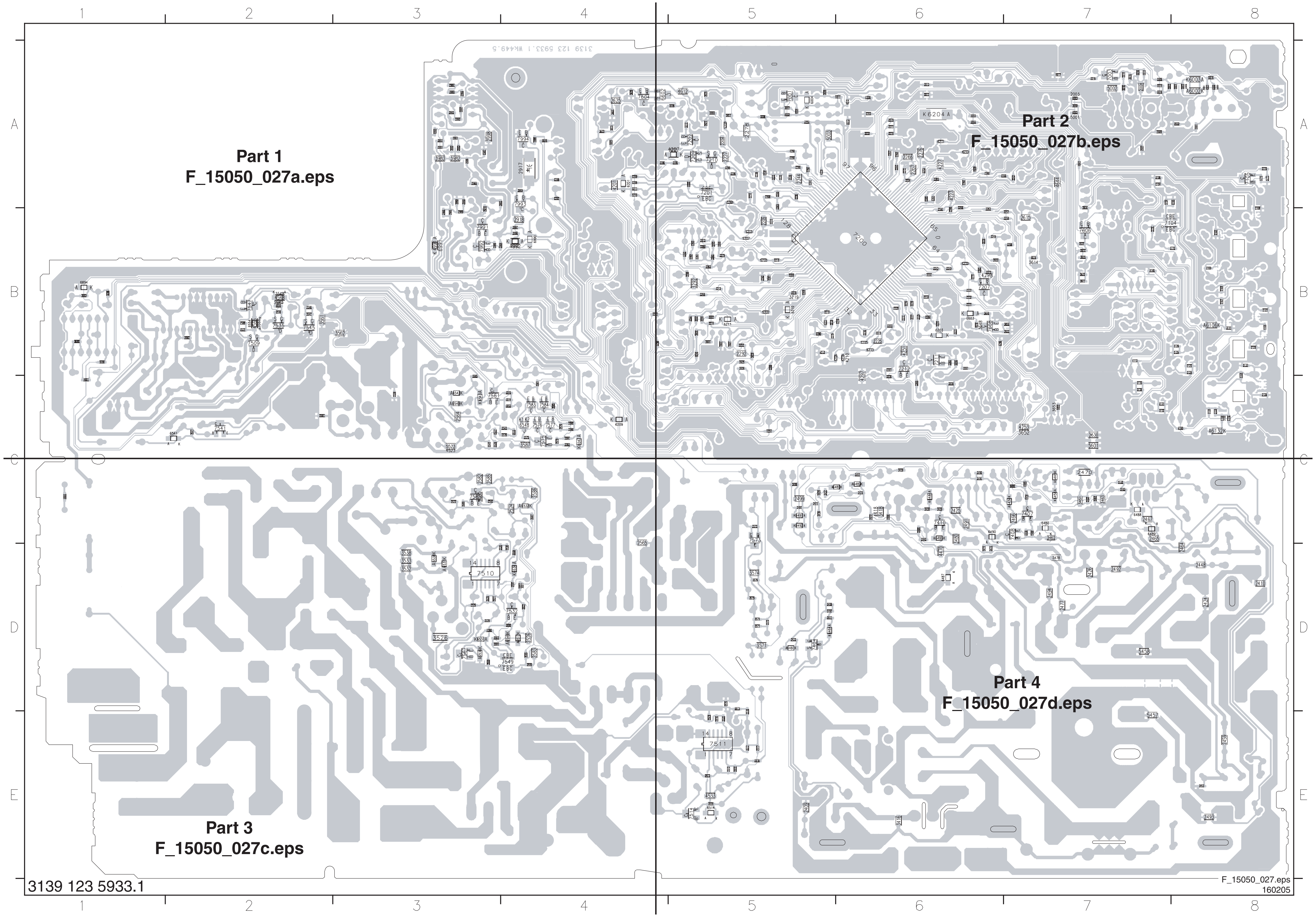
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1012	E6
1013	E8
1137	C8
1138	D7
1205	D5
1206	D5
1207	E7
1208	D7
1213	C5
1219	C7
1220	E4
1221	C5
1222	D3
1223	D8
1227	D7
1228	D7
1229	C8
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1234	D5
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1241	D5
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1250	C7
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1252	D6
1254	C6
1255	C6
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1266	D6
1270	D6
1271	E7
1272	C7
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1281	E3
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1502	A2
1503	C2
1504	C2
1505	A1
1507	B2
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1533	D2
1534	D2
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1546	B4
1572	C4
1577	D3
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1685	D6
1692	D1
1693	D1
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2006	E7
2008	E7
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2134	C7
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2461	C7
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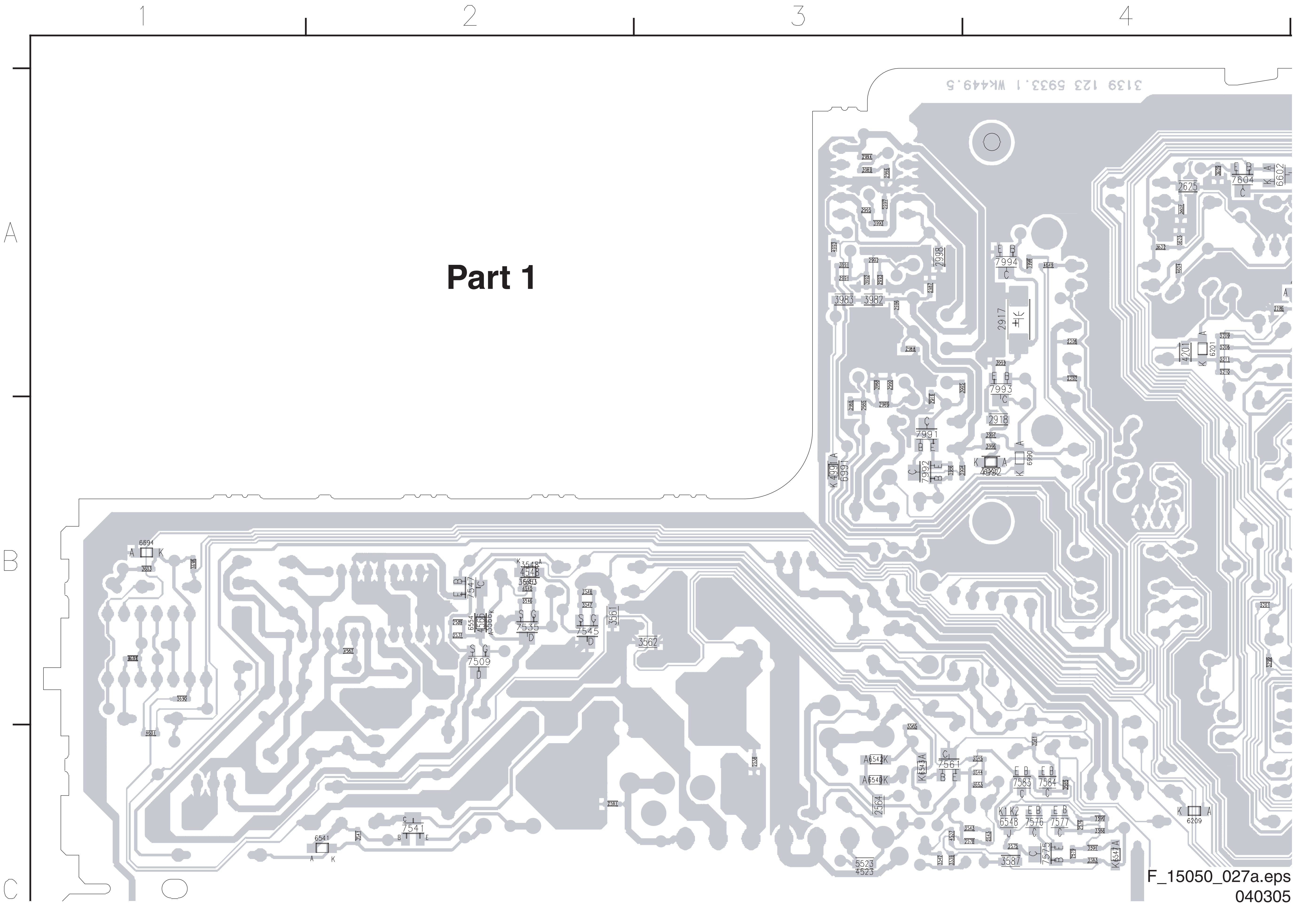
Layout Mono Carrier (Overview Bottom Side)

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2003 A7	2122 B8	2208 A4	2229 B6	2253 A6	2270 A6	2287 B6	2432 C7	2474 D6	2515 D5	2546 B2	2586 C4	2632 B7	2992 A3	3006 A5	3126 B8	3174 B7	3216 B6	3232 A5	3257 B7	3280 B5	3299 B4	3443 C6	3512 E5	3538 D3	3553 C4	3583 C4
2004 A7	2124 B8	2209 B5	2231 B6	2255 A7	2271 A6	2290 A5	2448 D8	2477 D7	2516 E5	2564 C3	2589 B2	2633 B6	2993 A3	3007 A5	3129 C8	3202 B5	3217 A5	3235 C6	3258 B7	3281 B5	3408 D5	3453 E8	3517 E5	3539 C3	3561 B2	3585 C4
2007 A7	2126 B8	2210 B5	2232 B6	2256 A6	2272 A6	2292 B5	2459 E8	2478 D7	2517 E5	2565 C4	2591 C2	2634 B6	2994 A3	3008 A7	3130 C8	3203 A5	3218 B5	3236 B6	3261 B4	3282 B5	3416 E6	3459 C7	3518 E5	3540 B2	3562 B3	3586 C4
2009 A7	2127 B8	2211 B6	2233 B6	2257 A6	2274 A6	2293 A5	2462 C7	2491 C6	2518 E5	2571 D5	2592 C3	2916 B3	2995 A3	3009 A5	3132 C7	3204 B5	3219 B5	3237 B5	3262 B5	3283 B5	3418 C6	3460 C7	3522 E5	3541 C2	3565 C3	3587 C4
2011 A6	2131 C7	2212 B5	2235 A5	2260 A6	2276 A6	2294 A5	2463 C7	2492 D7	2519 E5	2572 C5	2601 B5	2917 A4	2996 A3	3010 A7	3134 C7	3205 A5	3220 B6	3238 C6	3263 B5	3284 B5	3426 C6	3461 C7	3524 E5	3542 C3	3566 B2	3588 D4
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2013 A7	2136 C8	2214 A5	2238 A5	2262 B6	2279 B5	2407 C7	2465 C7	2494 D7	2521 D3	2575 C4	2615 B7	2985 B3	2998 A3	3016 A7	3167 B8	3207 B5	3222 A6	3247 A6	3265 B5	3287 B5	3428 C5	3463 C7	3527 D4	3544 C4	3568 D3	3590 C4
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2016 A7	2201 B6	2216 B6	2241 A5	2264 B6	2282 B5	2410 D8	2467 C7	2496 C6	2524 C4	2578 C4	2620 A5	2987 A3	3001 A8	3019 A7	3169 B8	3209 A4	3226 B6	3249 B6	3267 B6	3289 C6	3436 C5	3480 C6	3529 D3	3546 B2	3573 D5	3593 D3
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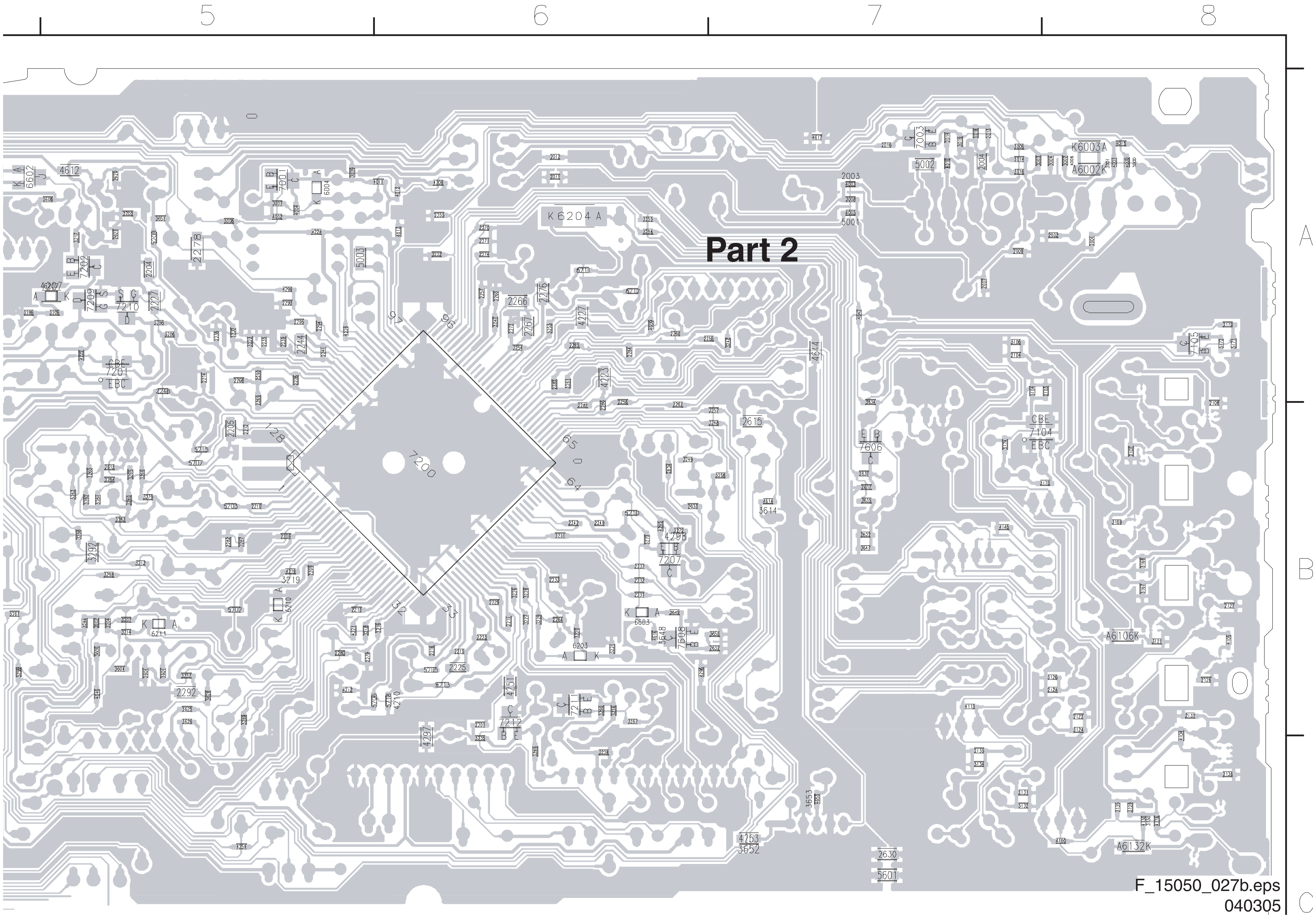
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3614 B7	4691 C1	7545 B2
3622 A4	4692 B1	7547 B2
3623 A4	4694 C1	7549 D4
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3626 B5	4992 B4	7567 D3
3628 B5	4993 A3	7573 C5
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4210 B6	6532 C4	
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4219 B5	6536 D3	
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4253 C7	6548 C4	
4254 C5	6549 D4	
4295 B6	6553 B2	
4296 B6	6554 B2	
4297 C6	6602 A4	
4298 B6	6603 B6	
4299 A5	6694 B1	
4401 C7	6990 B4	
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4470 D6	7001 A5	
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4523 C3	7104 B7	
4527 C3	7105 A8	
4533 E5	7200 B6	
4540 B2	7201 A5	
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4551 D4	7207 B6	
4566 B2	7209 A5	
4567 B2	7210 A5	
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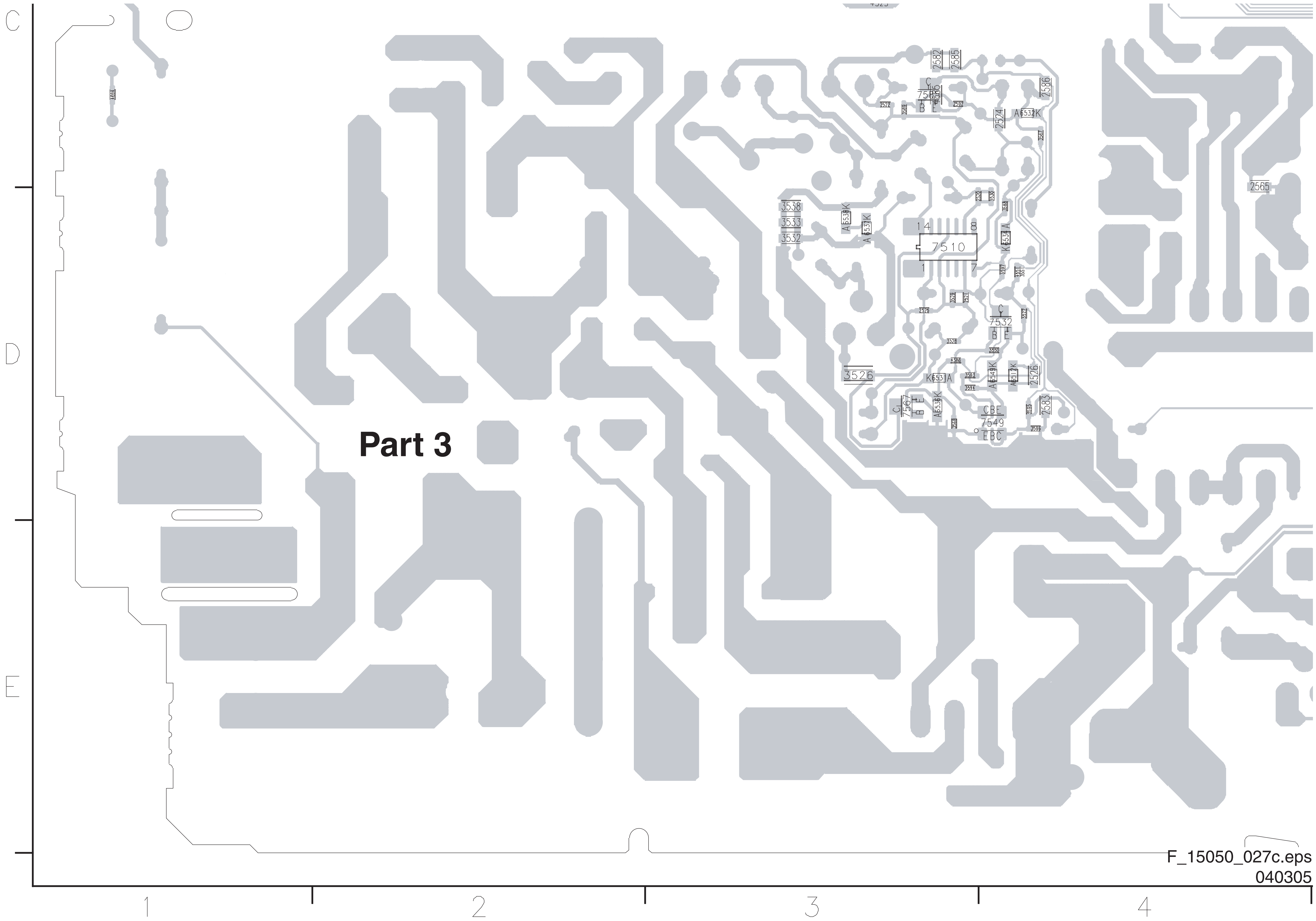
Layout Mono Carrier (Part 1 Bottom Side)



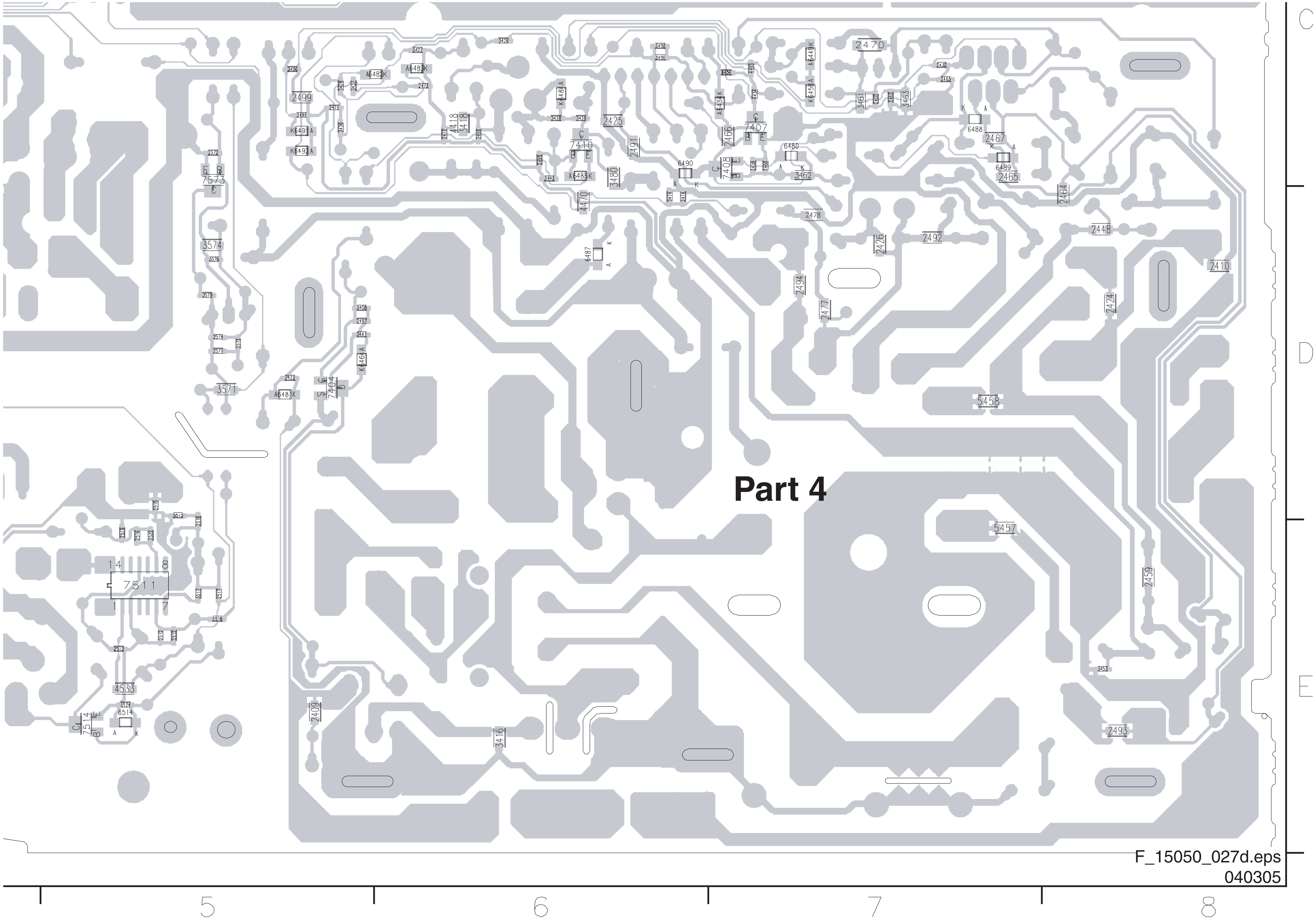
Layout Mono Carrier (Part 2 Bottom Side)



Layout Mono Carrier (Part 3 Bottom Side)

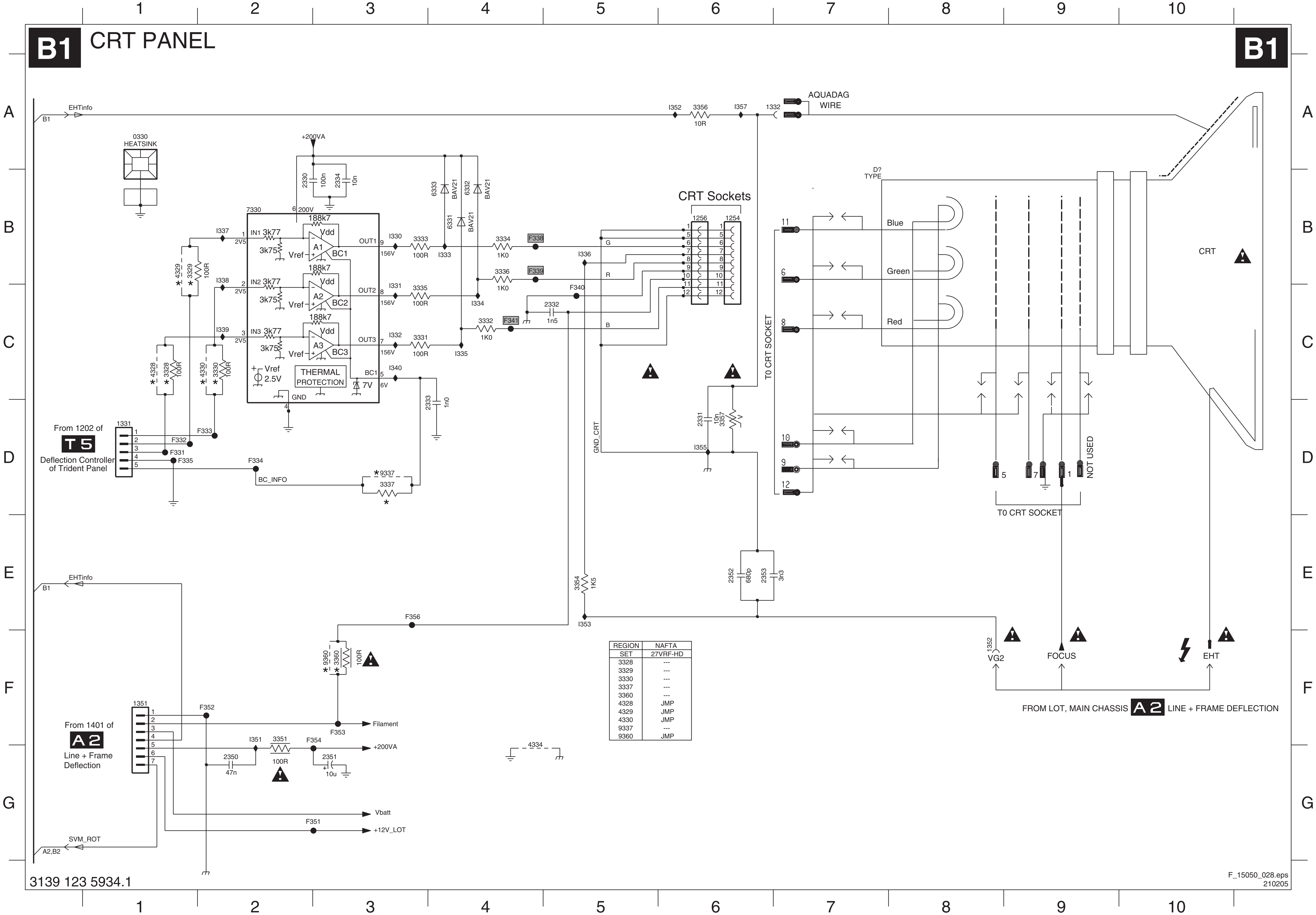


Layout Mono Carrier (Part 4 Bottom Side)



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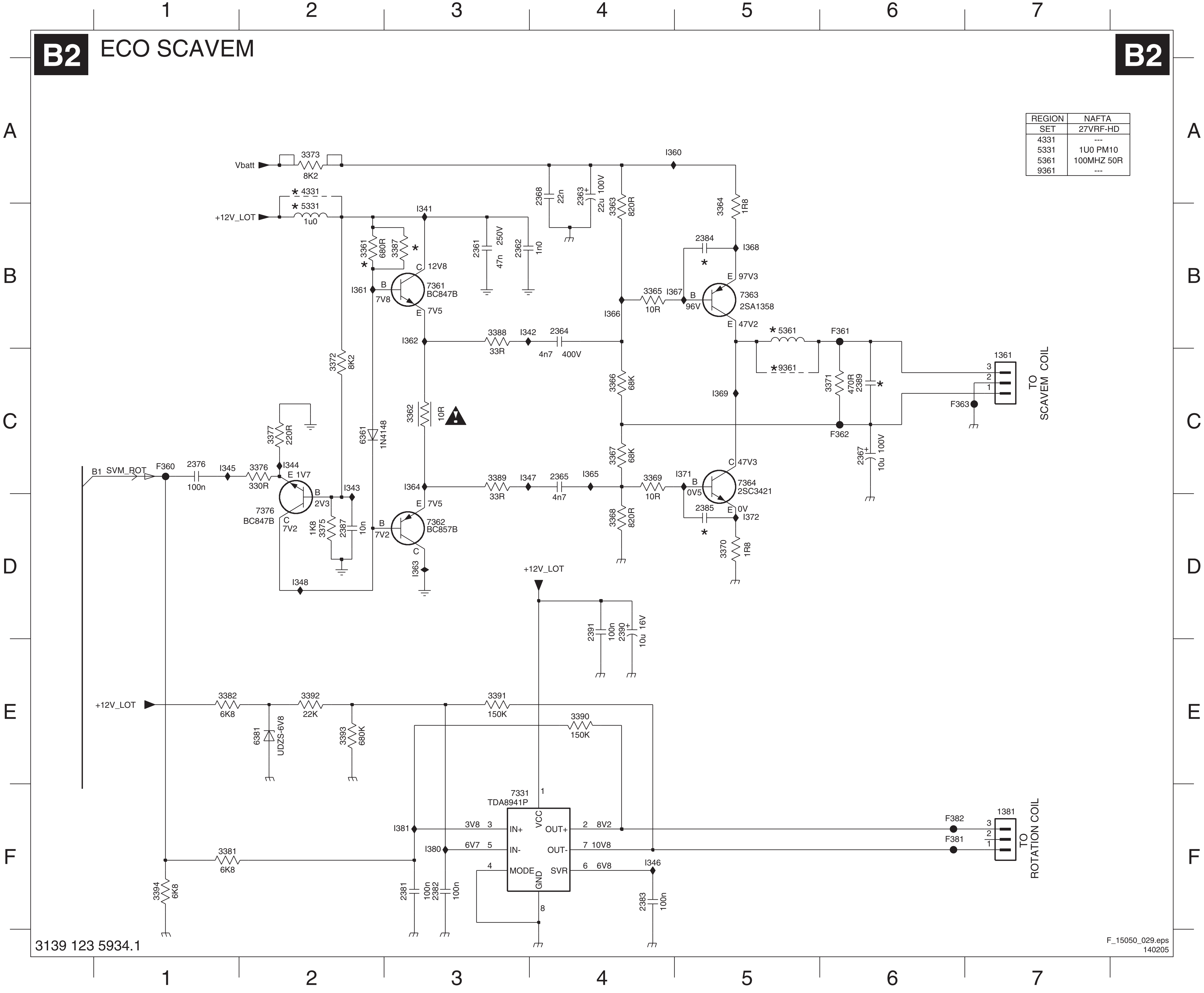
CRT Panel (Family Board)



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4330	JMP
9337	---
9360	JMP

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1332 A7
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2350 G2
2351 G3
2352 E6
2353 E6
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3329 B1
3330 C2
3331 C3
3332 C4
3333 B3
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4334 G4
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6333 B4
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9360 F3
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F341 C4
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F353 F3
F354 F3
F356 E3
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I352 A6
I353 E5
I355 D6
I357 A6

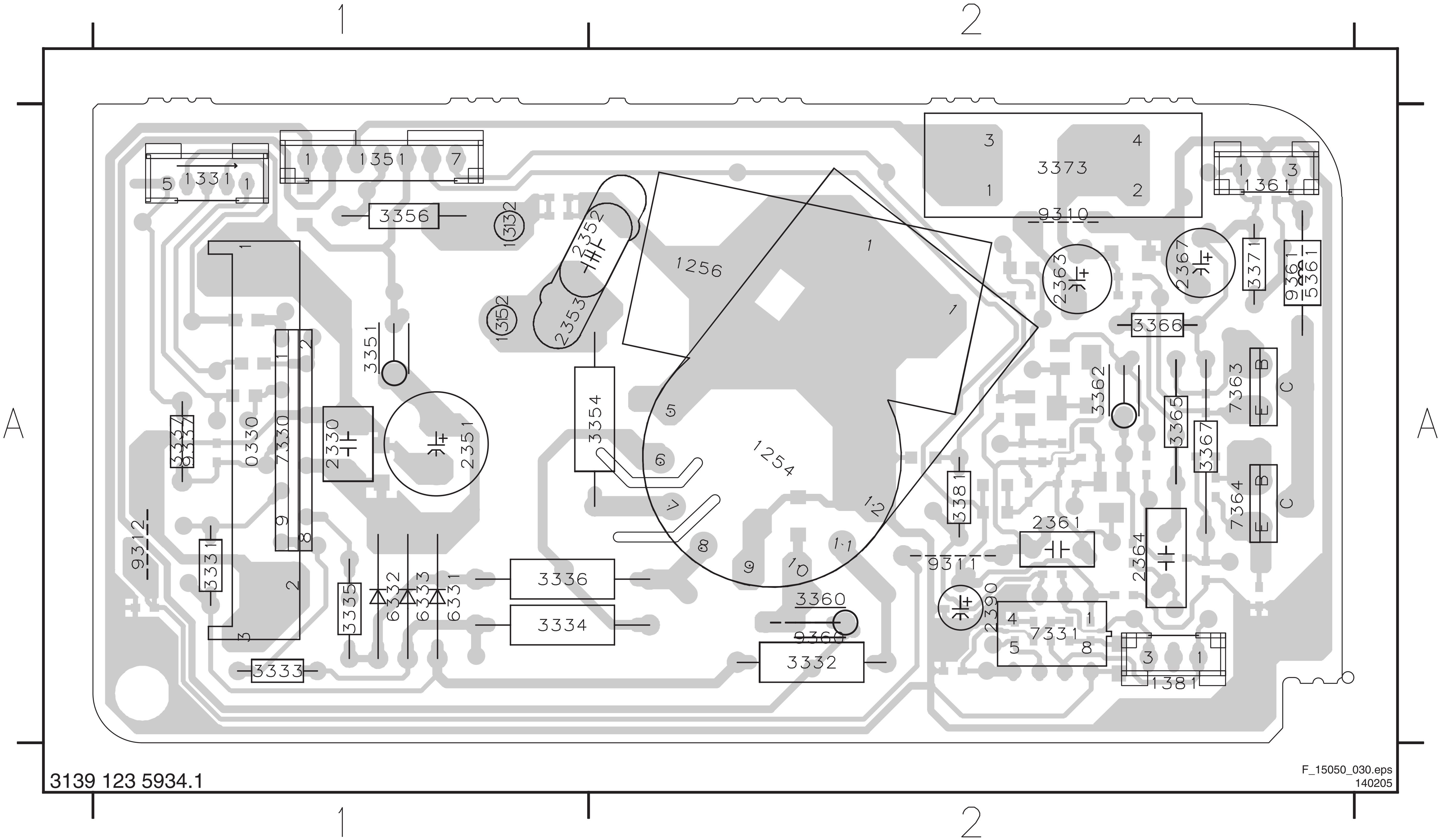
CRT Panel: Eco Scavem (Family Board)



1361 C7	I366 B4
1381 F7	I367 B4
2361 B3	I368 B5
2362 B3	I369 C5
2363 A4	I371 C5
2364 B4	I372 D5
2365 C4	I380 F3
2367 C6	I381 F3
2368 A4	
2376 C1	
2381 F3	
2382 F3	
2383 F4	
2384 B5	
2385 D5	
2387 D2	
2389 C6	
2390 D4	
2391 D4	
3361 B2	
3362 C3	
3363 B4	
3364 B5	
3365 B4	
3366 C4	
3367 C4	
3368 D4	
3369 C4	
3370 D5	
3371 C6	
3372 C2	
3373 A2	
3375 D2	
3376 C2	
3377 C2	
3381 F1	
3382 E1	
3387 B3	
3388 B3	
3389 C3	
3390 E4	
3391 E3	
3392 E2	
3393 E2	
3394 F1	
4331 A2	
5331 B2	
5361 B5	
6361 C2	
6381 E2	
7331 F3	
7361 B3	
7362 D3	
7363 B5	
7364 C5	
7376 D2	
9361 C5	
F360 C1	
F361 B6	
F362 C6	
F363 C6	
F381 F6	
F382 F6	
I341 B3	
I342 B3	
I343 C2	
I344 C2	
I345 C1	
I346 F4	
I347 C3	
I348 D2	
I360 A4	
I361 B2	
I362 B3	
I363 D3	
I364 C3	
I365 C4	

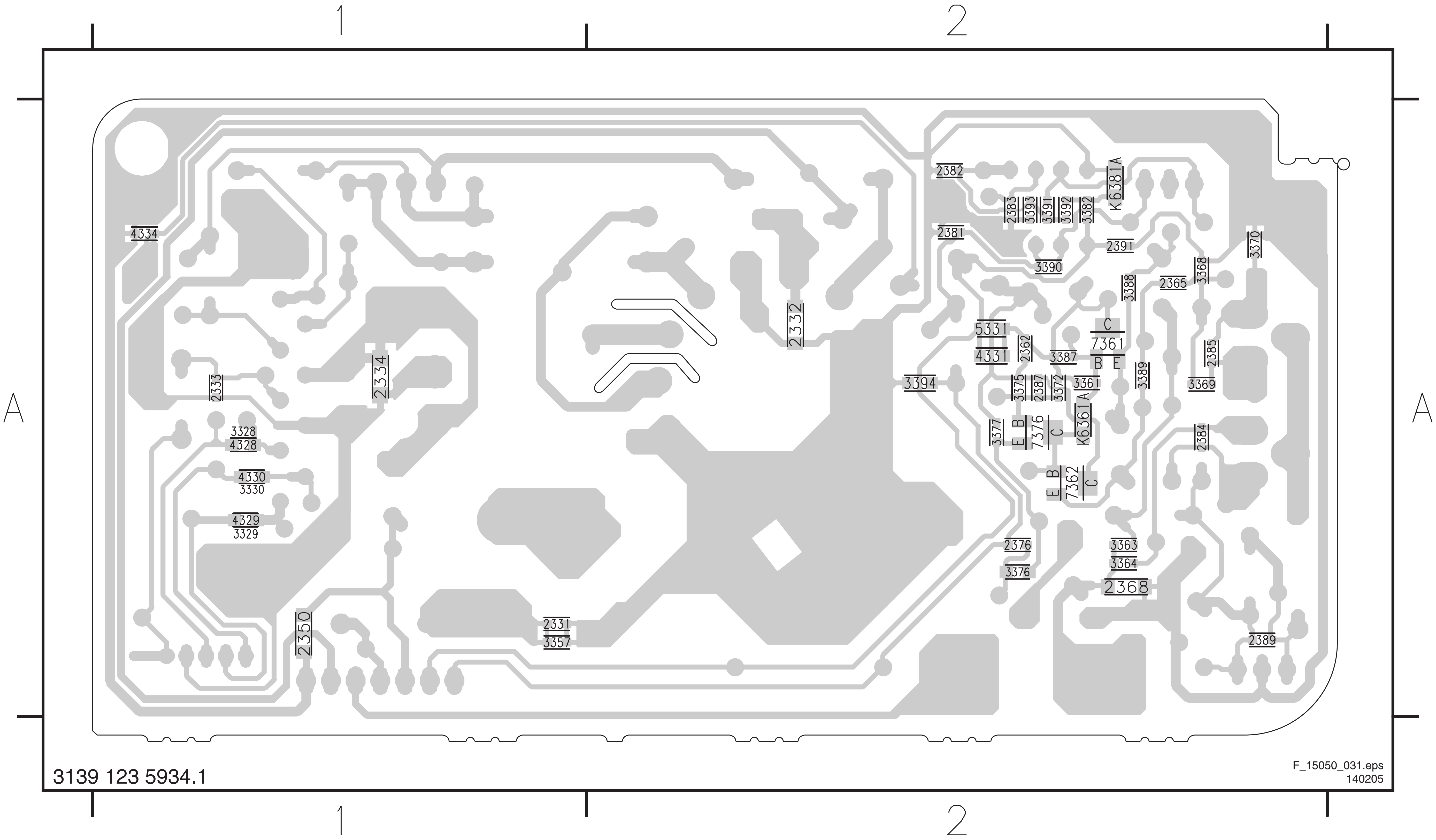
Layout CRT Panel (Top Side) (Family Board)

0330 A1	1332 A1	1381 A2	2353 A1	2367 A2	3333 A1	3337 A1	3360 A2	3367 A2	5361 A2	7330 A1	9310 A2	9360 A2
1254 A2	1351 A1	2330 A1	2361 A2	2390 A2	3334 A1	3351 A1	3362 A2	3371 A2	6331 A1	7331 A2	9311 A2	9361 A2
1256 A2	1352 A1	2351 A1	2363 A2	3331 A1	3335 A1	3354 A2	3365 A2	3373 A2	6332 A1	7363 A2	9312 A1	
1331 A1	1361 A2	2352 A1	2364 A2	3332 A2	3336 A1	3356 A1	3366 A2	3381 A2	6333 A1	7364 A2	9337 A1	

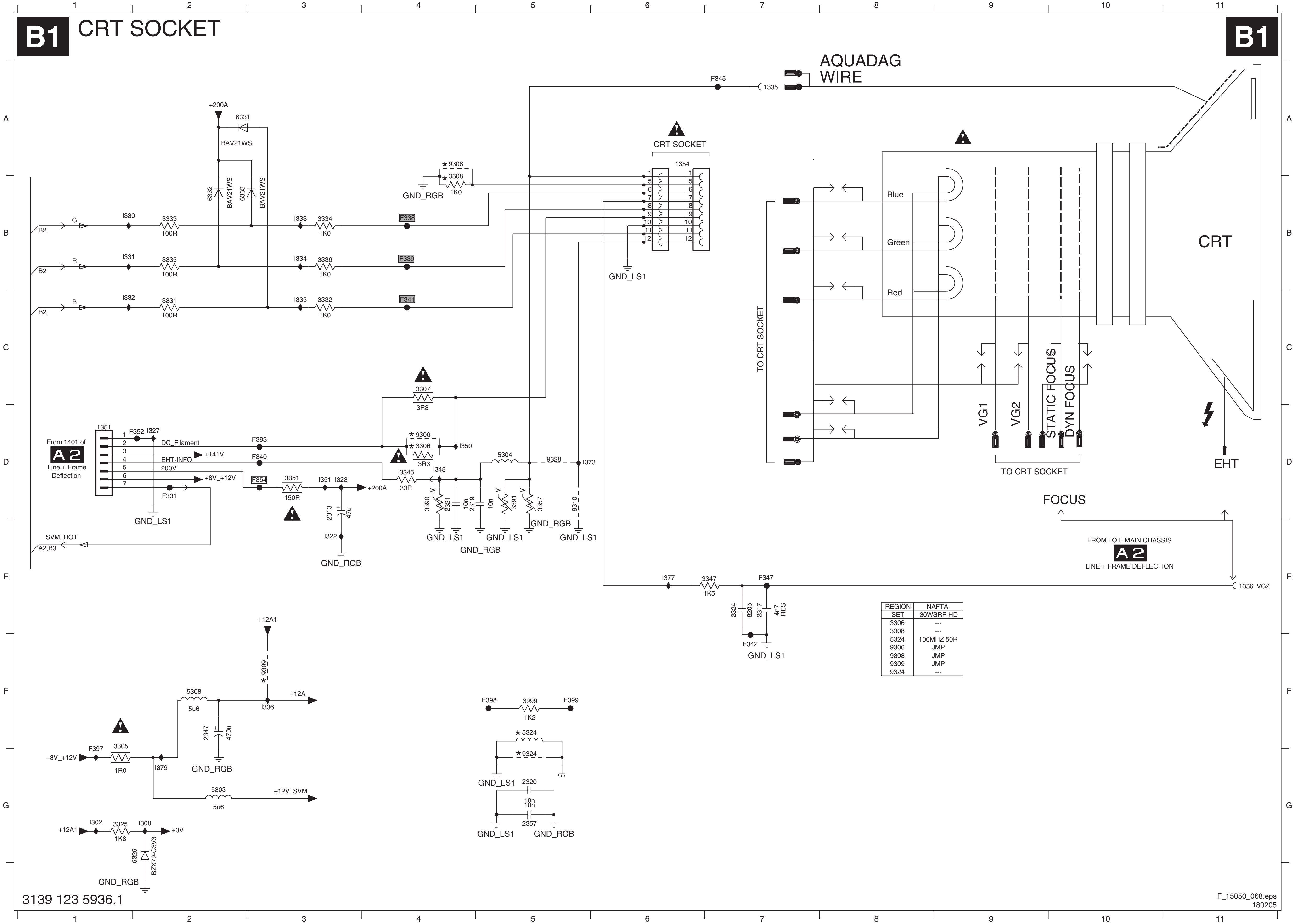


Layout CRT Panel (Bottom Side) (Family Board)

2331	A1	2350	A1	2376	A2	2384	A2	2391	A2	3357	A1	3368	A2	3375	A2	3387	A2	3391	A2	4328	A1	4334	A1	7361	A2
2332	A2	2362	A2	2381	A2	2385	A2	3328	A1	3361	A2	3369	A2	3376	A2	3388	A2	3392	A2	4329	A1	5331	A2	7362	A2
2333	A1	2365	A2	2382	A2	2387	A2	3329	A1	3363	A2	3370	A2	3377	A2	3389	A2	3393	A2	4330	A1	6361	A2	7376	A2
2334	A1	2368	A2	2383	A2	2389	A2	3330	A1	3364	A2	3372	A2	3382	A2	3390	A2	3394	A2	4331	A2	6381	A2		



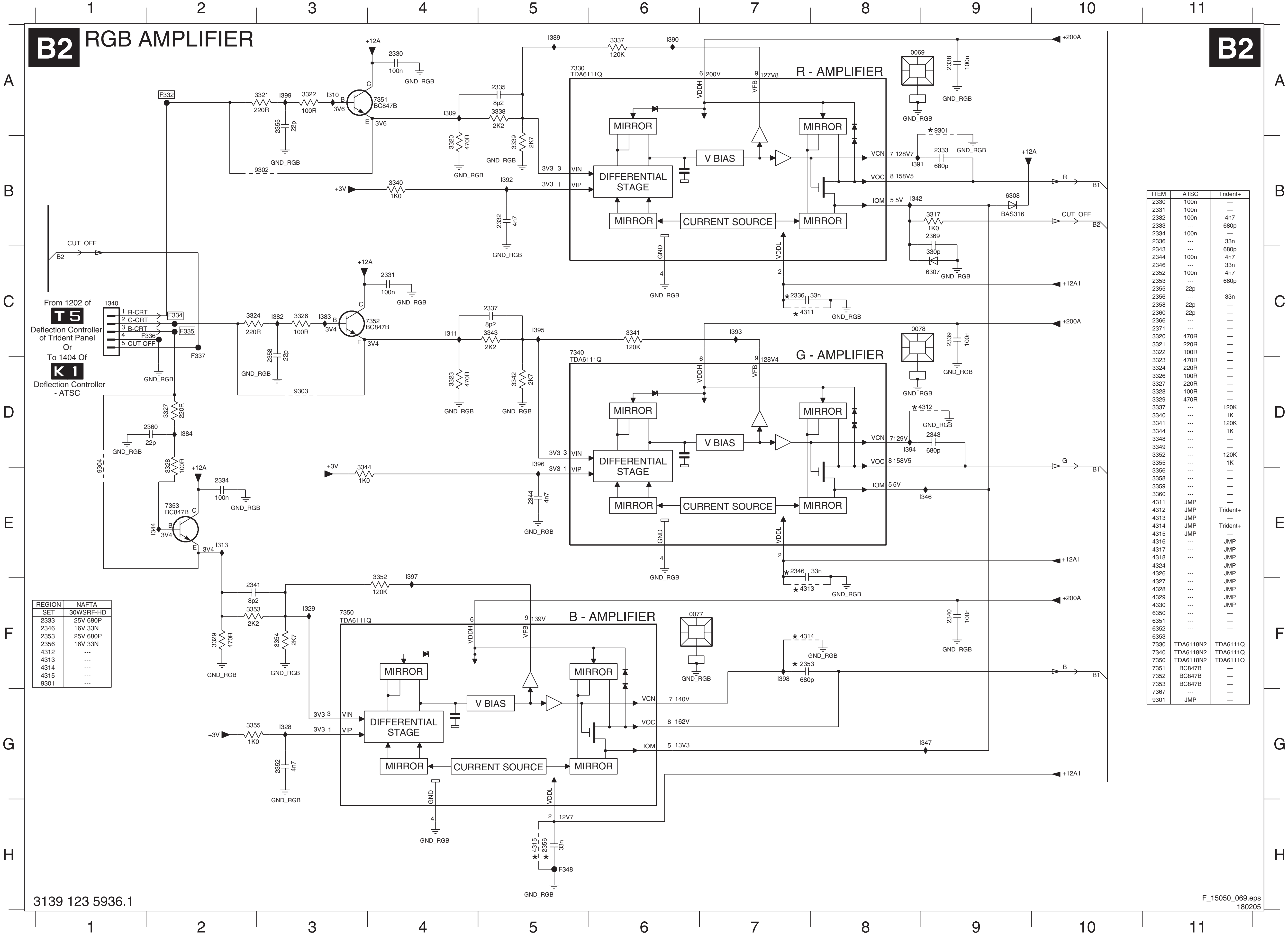
CRT Panel (Multi Board)



REGION	NAFTA
SET	30WSRF-HD
3306	---
3308	---
5324	100MHZ 50R
9306	JMP
9308	JMP
9309	JMP
9324	---

1335 A7
1336 E11
1351 D1
1354 A6
2313 D3
2317 E7
2319 D4
2320 G5
2321 D4
2324 E7
2347 F2
2357 G5
3305 G1
3306 D4
3307 C4
3308 A4
3325 G1
3331 C2
3332 C3
3333 B2
3334 B3
3335 B2
3336 B3
3345 D4
3347 E7
3351 D3
3357 D5
3390 D4
3391 D5
3999 F5
5303 G2
5304 D5
5308 F2
5324 F5
6325 G1
6331 A2
6332 B2
6333 B2
9306 D4
9308 A4
9309 F3
9310 D5
9324 G5
9328 D5
F331 D2
F338 B4
F339 B4
F340 D3
F341 C4
F342 F7
F345 A7
F347 E7
F352 D2
F354 D3
F383 D3
F397 G1
F398 F5
F399 F5
I302 G1
I308 G2
I322 E3
I323 D3
I327 D2
I330 B1
I331 B1
I332 C1
I333 B3
I334 B3
I335 C3
I336 F3
I348 D4
I350 D4
I351 D3
I373 D5
I377 E6
I379 G2

CRT Panel: RGB Amplifier (Multi Board)

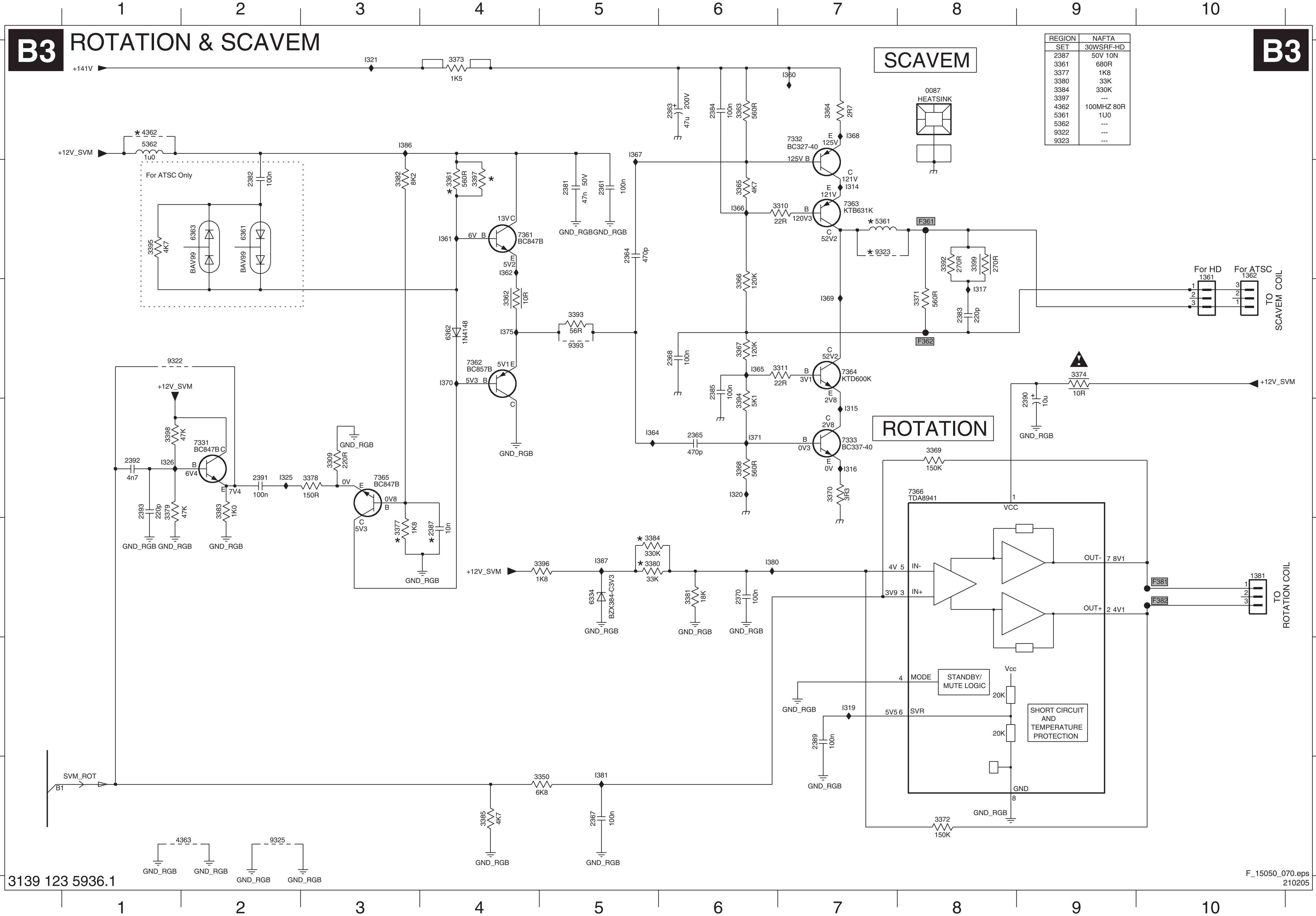


REGION	NAFTA
SET	30WSRF-HD
2333	25V 680P
2346	16V 33N
2353	25V 680P
2356	16V 33N
4312	---
4313	---
4314	---
4315	---
9301	---

ITEM	ATSC	Trident+
2330	100n	---
2331	100n	---
2332	100n	4n7
2333	---	680p
2334	100n	---
2336	---	33n
2343	---	680p
2344	100n	4n7
2346	---	33n
2352	100n	4n7
2353	---	680p
2355	22p	---
2356	---	33n
2358	22p	---
2360	22p	---
2366	---	---
2371	---	---
3320	470R	---
3321	220R	---
3322	100R	---
3323	470R	---
3324	220R	---
3326	100R	---
3327	220R	---
3328	100R	---
3329	470R	---
3337	---	120K
3340	---	1K
3341	---	120K
3344	---	1K
3348	---	---
3349	---	---
3352	---	120K
3355	---	1K
3356	---	---
3358	---	---
3359	---	---
3360	---	---
4311	JMP	---
4312	JMP	Trident+
4313	JMP	---
4314	JMP	Trident+
4315	JMP	---
4316	---	JMP
4317	---	JMP
4318	---	JMP
4324	---	JMP
4326	---	JMP
4327	---	JMP
4328	---	JMP
4329	---	JMP
4330	---	JMP
6350	---	---
6351	---	---
6352	---	---
6353	---	---
7330	TDA6118N2	TDA6111Q
7340	TDA6118N2	TDA6111Q
7350	TDA6118N2	TDA6111Q
7351	BC847B	---
7352	BC847B	---
7353	BC847B	---
7367	---	---
9301	JMP	---

0069 A8
0077 F6
0078 C8
1340 C1
2330 A4
2331 C4
2332 B5
2333 B9
2334 E2
2335 A5
2336 C7
2337 C5
2338 A9
2339 C9
2340 F9
2341 F2
2343 D9
2344 E5
2346 E7
2352 G3
2353 F7
2355 A3
2356 H5
2358 C3
2360 D2
2369 B9
3317 B9
3320 B4
3321 A3
3322 A3
3323 D4
3324 C2
3326 C3
3327 D2
3328 D2
3329 F2
3337 A6
3338 A5
3339 B5
3340 B4
3341 C6
3342 D5
3343 C5
3344 E3
3352 F4
3353 F2
3354 F3
3355 G2
4311 C7
4312 D9
4313 F7
4314 F7
4315 H5
6307 C9
6308 B9
7330 A5
7340 C5
7350 F3
7351 A4
7352 C3
7353 E2
9301 A9
9302 B3
9303 D3
9304 D1
F332 A2
F334 C2
F335 C2
F336 C2
F337 D2
F348 H5
I309 A4
I310 A3
I311 C4
I313 E2
I328 G3
I329 F3
I342 B8
I344 E2
I346 E9
I347 G9
I382 C3
I383 C3
I384 D2
I389 A5
I390 A6
I391 B8
I392 B5
I393 C7
I394 D8
I395 C5
I396 D5
I397 E4
I398 F7
I399 A3

CRT Panel: Rot. & SCAVEM (Multi Board)

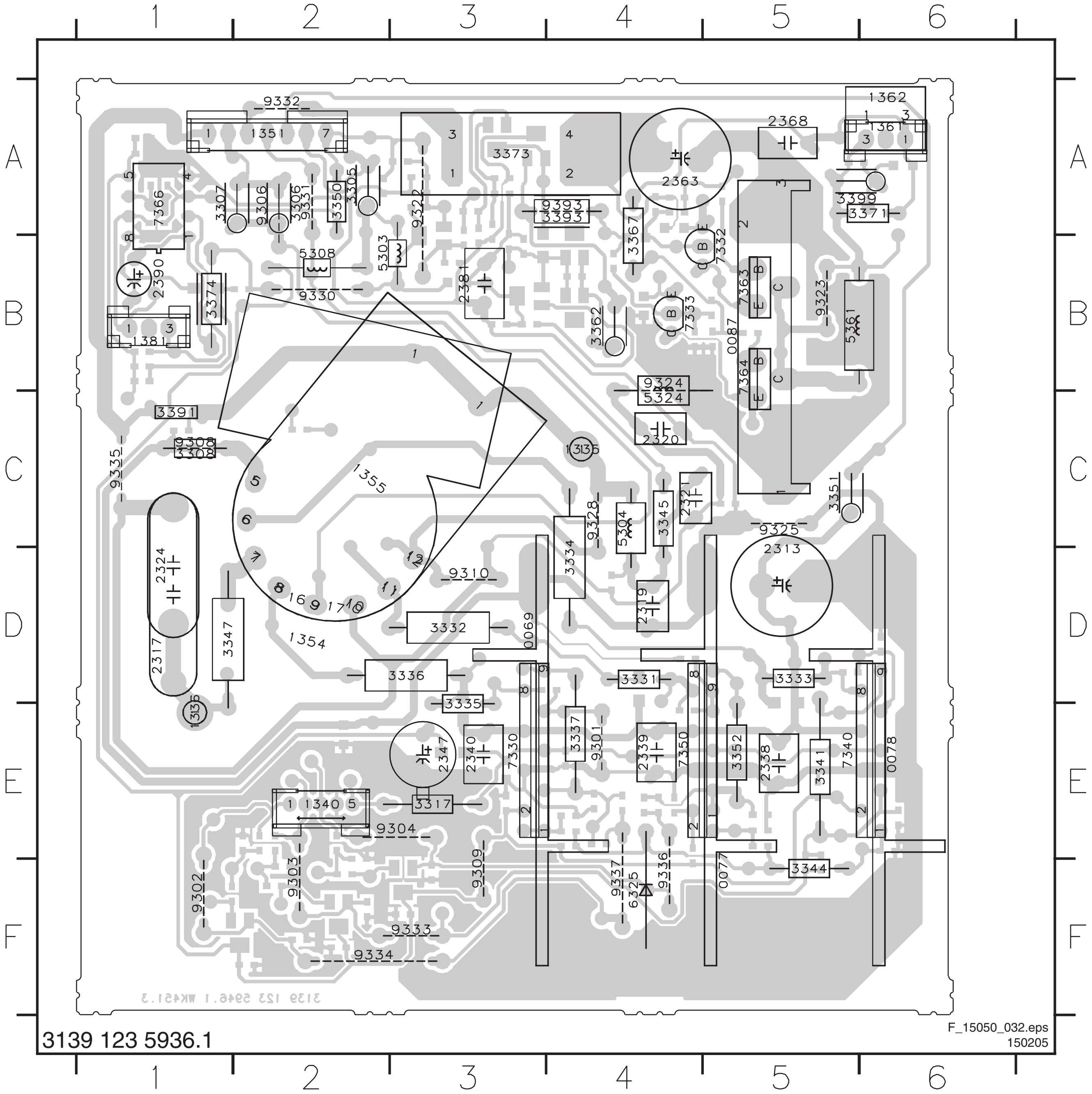


REGION	NAFTA
SET	30WSRF-HD
2387	50V 10N
3361	680R
3377	1K8
3380	33K
3384	330K
3397	---
4362	100MHZ 80R
5361	1U0
5362	---
9322	---
9323	---

0087 A8
1361 C10
1362 B10
1381 E10
2361 B5
2363 A6
2364 B5
2365 D6
2367 G5
2368 C6
2370 E6
2381 B5
2382 B2
2383 C8
2384 A6
2385 C6
2387 E4
2389 F7
2390 D9
2391 D2
2392 D1
2393 D1
3309 D3
3310 B7
3311 C7
3350 G5
3361 B4
3362 C4
3363 A6
3364 A7
3365 B6
3366 C6
3367 C6
3368 D6
3369 D8
3370 D7
3371 C8
3372 G8
3373 A4
3374 C9
3377 E3
3378 D3
3379 D1
3380 E5
3381 E6
3382 B3
3383 D2
3384 E5
3385 G4
3392 B8
3393 C5
3394 D6
3395 B1
3396 E5
3397 B4
3398 D1
3399 B8
4362 A1
4363 G2
5361 B7
5362 A1
6334 E5
6361 B2
6362 C4
6363 B2
7331 D2
7332 A7
7333 D7
7361 B4
7362 C4
7363 B7
7364 C7
7365 D3
7366 D8
9322 C1
9323 B7
9325 G2
9393 C5
F361 B8
F362 C8
F381 E10
F382 E10
I314 B7
I315 D7
I316 D7
I317 C8
I319 F7
I320 D6
I321 A3
I325 D2
I326 D1
I360 A7
I361 B4
I362 B4
I364 D5
I365 C6
I366 B6
I367 A5
I368 A7
I369 C7
I370 C4
I371 D6
I375 C4
I380 E6
I381 G5
I386 A3
I387 E5

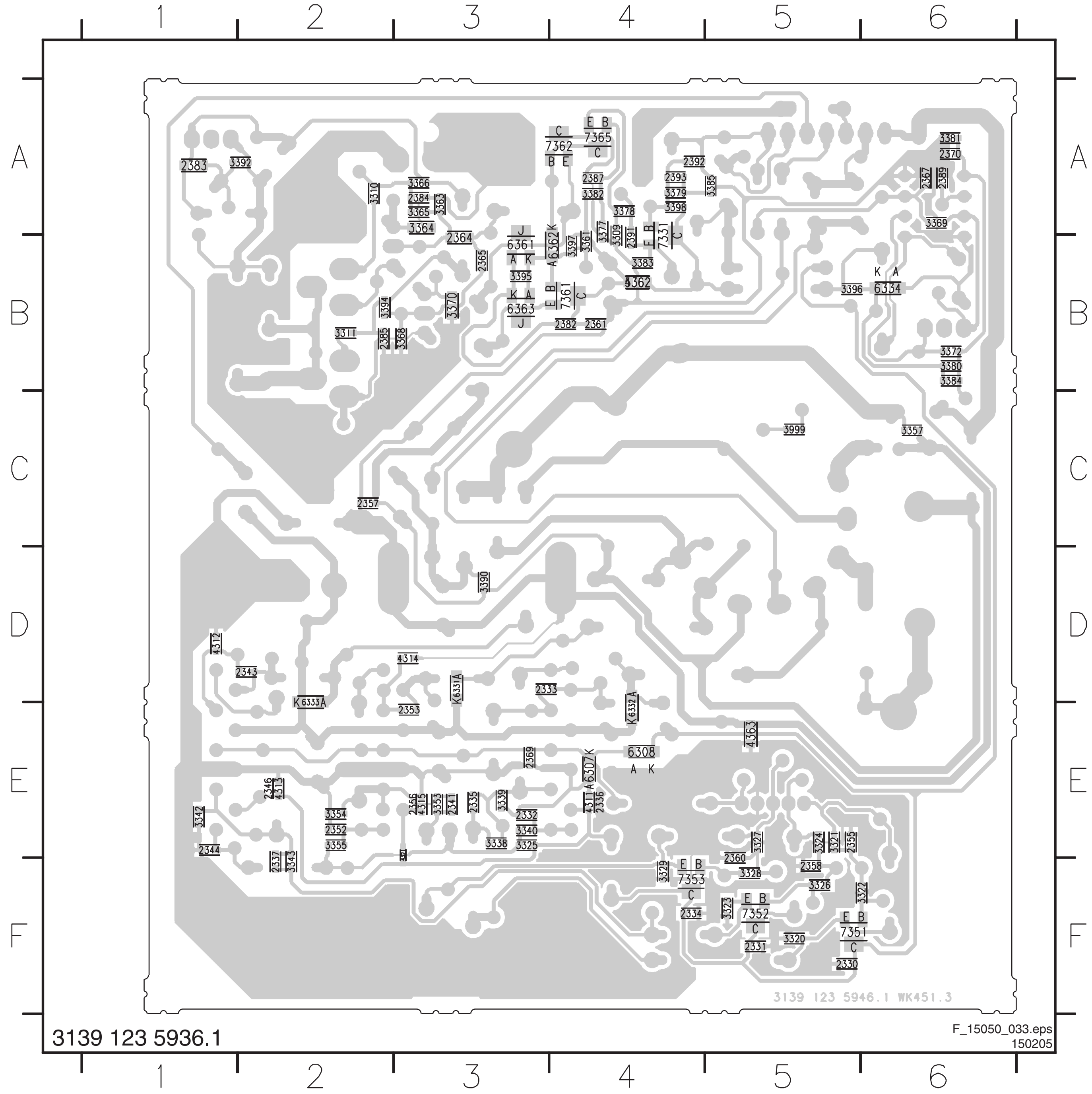
Layout CRT Panel (Top Side) (Multi Board)

0069	D3	1351	A2	2317	D1	2340	E3	3306	A2	3334	D4	3347	D1	3373	A3	5308	B2	7340	E5	9303	F2	9323	B5	9333	F3
0077	F5	1354	D2	2319	D4	2347	E3	3307	A1	3335	E3	3350	A2	3374	B1	5324	C4	7350	E4	9304	E3	9324	B4	9334	F2
0078	E6	1355	C2	2320	C4	2363	A4	3308	C1	3336	D3	3351	C5	3391	C1	5361	B5	7363	B5	9306	A2	9325	C5	9335	C1
0087	B5	1361	A6	2321	C4	2368	A5	3317	E3	3337	E4	3352	E5	3393	A4	6325	F4	7364	B5	9308	C1	9328	C4	9336	F4
1335	C4	1362	A6	2324	D1	2381	B3	3331	D4	3341	E5	3362	B4	3399	A5	7330	E3	7366	A1	9309	F3	9330	B2	9337	F4
1336	E1	1381	B1	2338	E5	2390	B1	3332	D3	3344	F5	3367	B4	5303	B2	7332	B5	9301	E4	9310	D3	9331	A2	9393	A4
1340	E2	2313	D5	2339	E4	3305	A2	3333	D5	3345	C4	3371	A6	5304	C4	7333	B4	9302	F1	9322	A3	9332	A2		

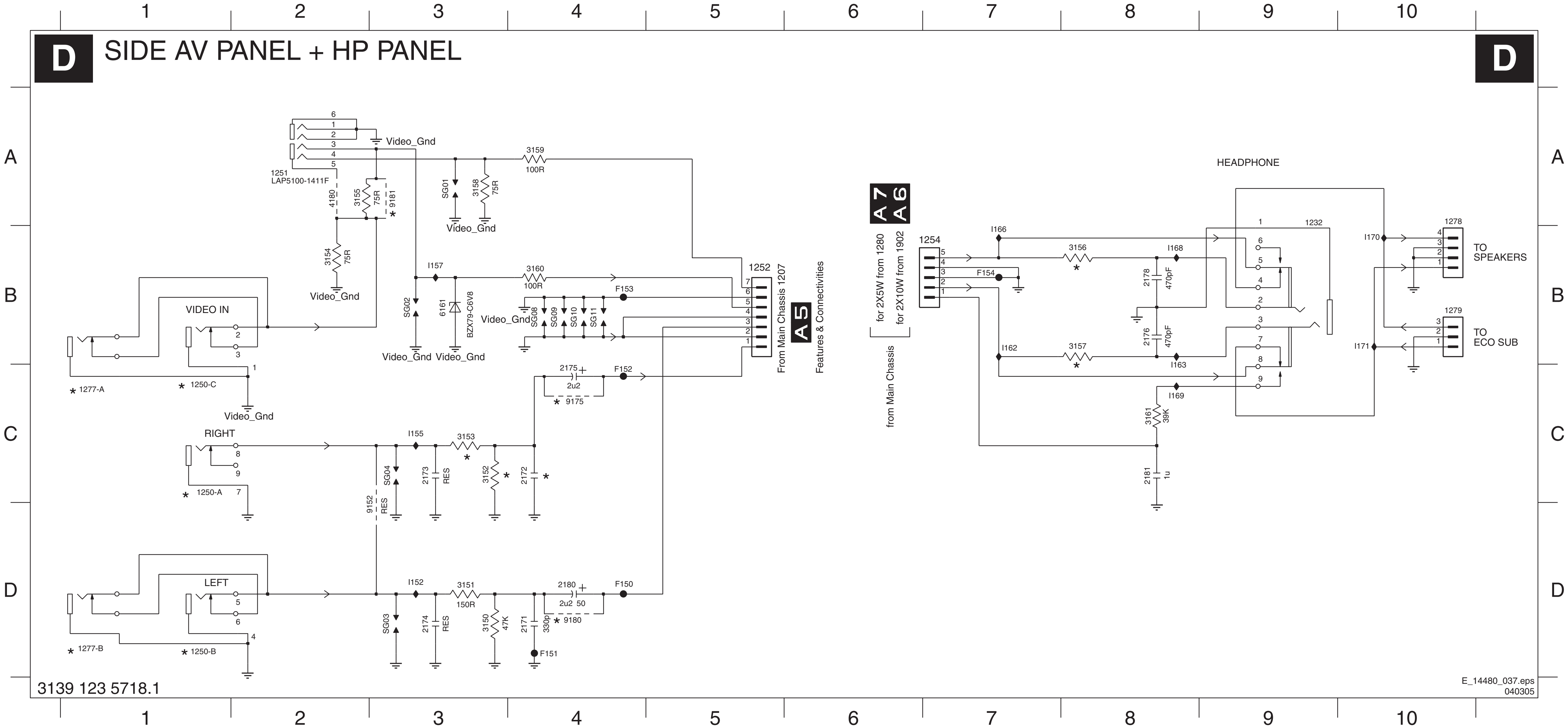


Layout CRT Panel (Bottom Side) (Multi Board)

2330	F5	2352	E2	2370	A6	3311	B2	3339	E3	3366	A3	3384	B6	4313	E2	6334	B6
2331	F5	2353	E3	2382	B4	3320	F5	3340	E3	3368	B3	3385	A5	4314	D3	6361	B3
2332	E3	2355	E5	2383	A1	3321	E5	3342	E1	3369	A6	3390	D3	4315	E3	6362	B4
2333	D3	2356	E3	2384	A3	3322	F6	3343	F2	3370	B3	3392	A2	4321	E3	6363	B3
2334	F4	2357	C2	2385	B2	3323	F5	3353	E3	3372	B6	3394	B2	4362	B4	7331	B4
2335	E3	2358	F5	2387	A4	3324	E5	3354	E2	3377	A4	3395	B3	4363	E5	7351	F5
2336	E4	2360	E5	2389	A6	3325	E3	3355	E2	3378	A4	3396	B5	5362	B4	7352	F5
2337	F2	2361	B4	2391	B4	3326	F5	3357	C6	3379	A4	3397	B4	6307	E4	7353	F4
2341	E3	2364	B3	2392	A4	3327	E5	3361	B4	3380	B6	3398	A4	6308	E4	7361	B4
2343	D2	2365	B3	2393	A4	3328	F5	3363	A3	3381	A6	3999	C5	6331	D3	7362	A4
2344	E1	2367	A6	3309	B4	3329	F4	3364	A3	3382	A4	4311	E4	6332	E4	7365	A4
2346	E2	2369	E3	3310	A2	3338	E3	3365	A3	3383	B4	4312	D1	6333	D2		



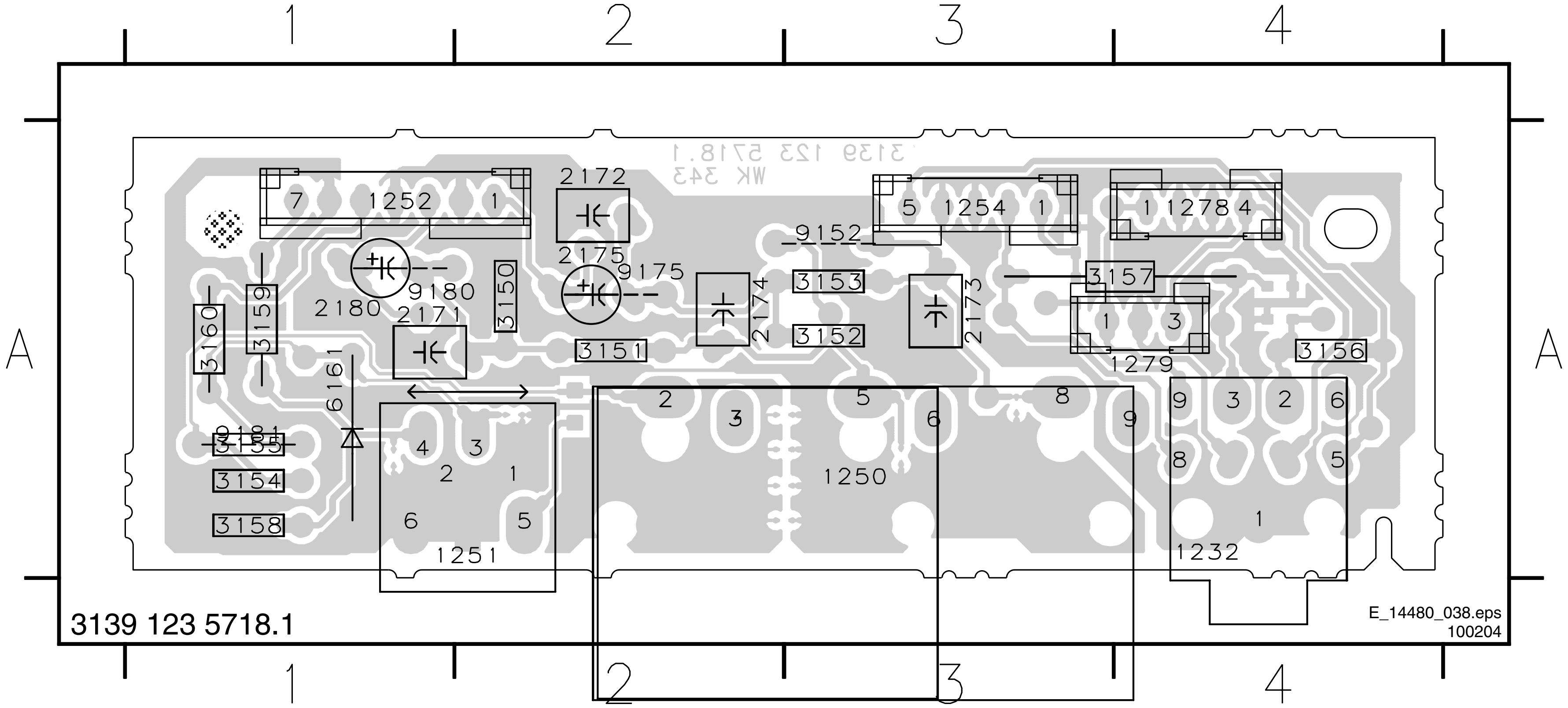
Side AV + HP Panel (PV0-2)



1232 A9
1250-A C1
1250-B D1
1250-C C1
1251 A2
1252 B5
1254 B6
1277-A C1
1277-B D1
1278 A10
1279 B10
2171 D4
2172 C4
2173 C3
2174 D3
2175 C4
2176 B8
2178 B8
2180 D4
2181 C8
3150 D3
3151 D3
3152 C3
3153 C3
3154 B2
3155 A2
3156 B8
3157 B8
3158 A3
3159 A4
3160 B4
3161 C8
4180 A2
6161 B3
9152 D3
9175 C4
9180 D4
9181 A3
F150 D4
F151 D4
F152 C4
F153 B4
F154 B7
I152 D3
I155 C3
I157 B3
I162 B7
I163 C8
I166 B7
I168 B8
I169 C8
I170 B10
I171 B10
SG01 A3
SG02 B3
SG03 D3
SG04 C3
SG08 B4
SG09 B4
SG10 B4
SG11 B4

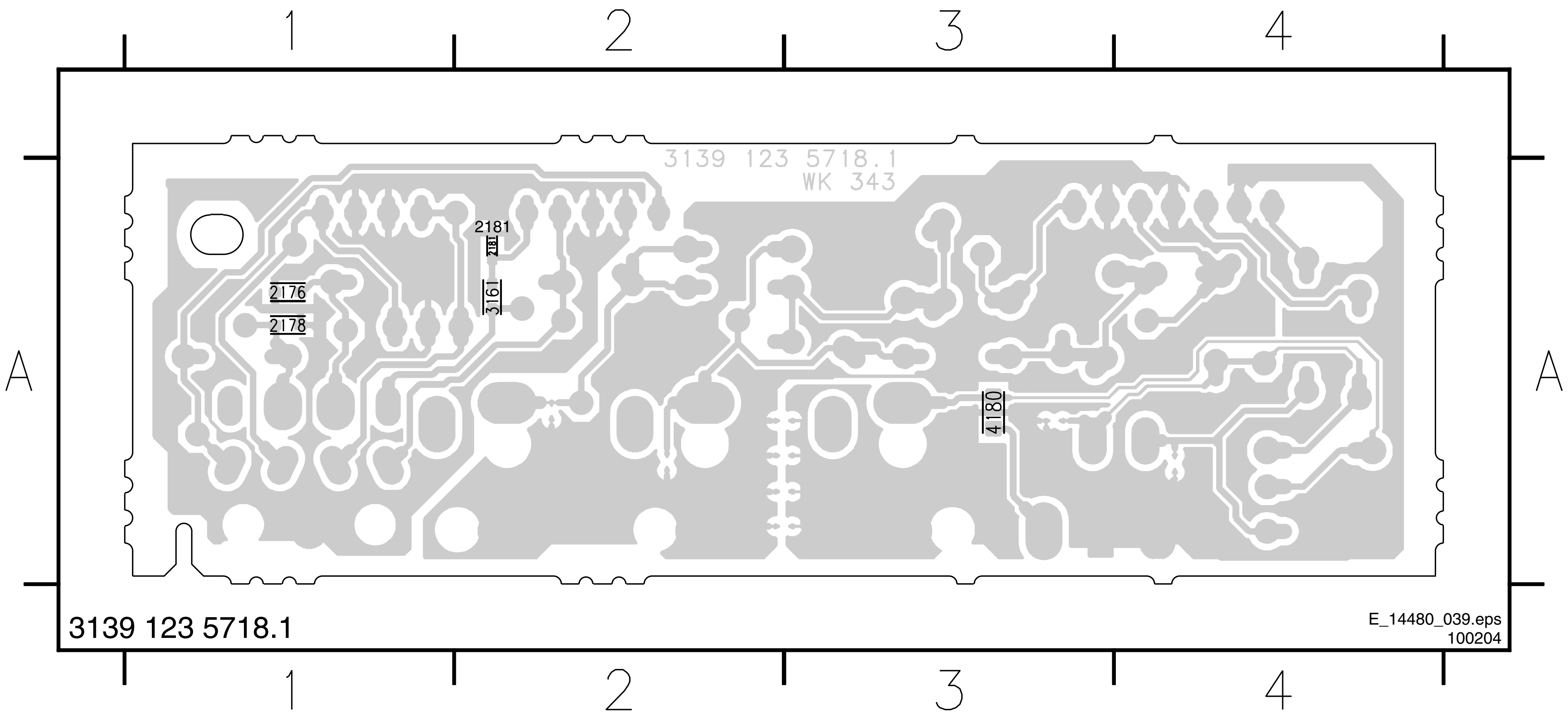
Layout Side AV + HP Panel (PV0-2) (Top Side)

1232	A4	1254	A3	2171	A1	2175	A2	3152	A3	3156	A4	3160	A1	9180	A1
1250	A3	1277	A2	2172	A2	2180	A1	3153	A3	3157	A4	6161	A1	9181	A1
1251	A2	1278	A4	2173	A3	3150	A2	3154	A1	3158	A1	9152	A3		
1252	A1	1279	A4	2174	A2	3151	A2	3155	A1	3159	A1	9175	A2		

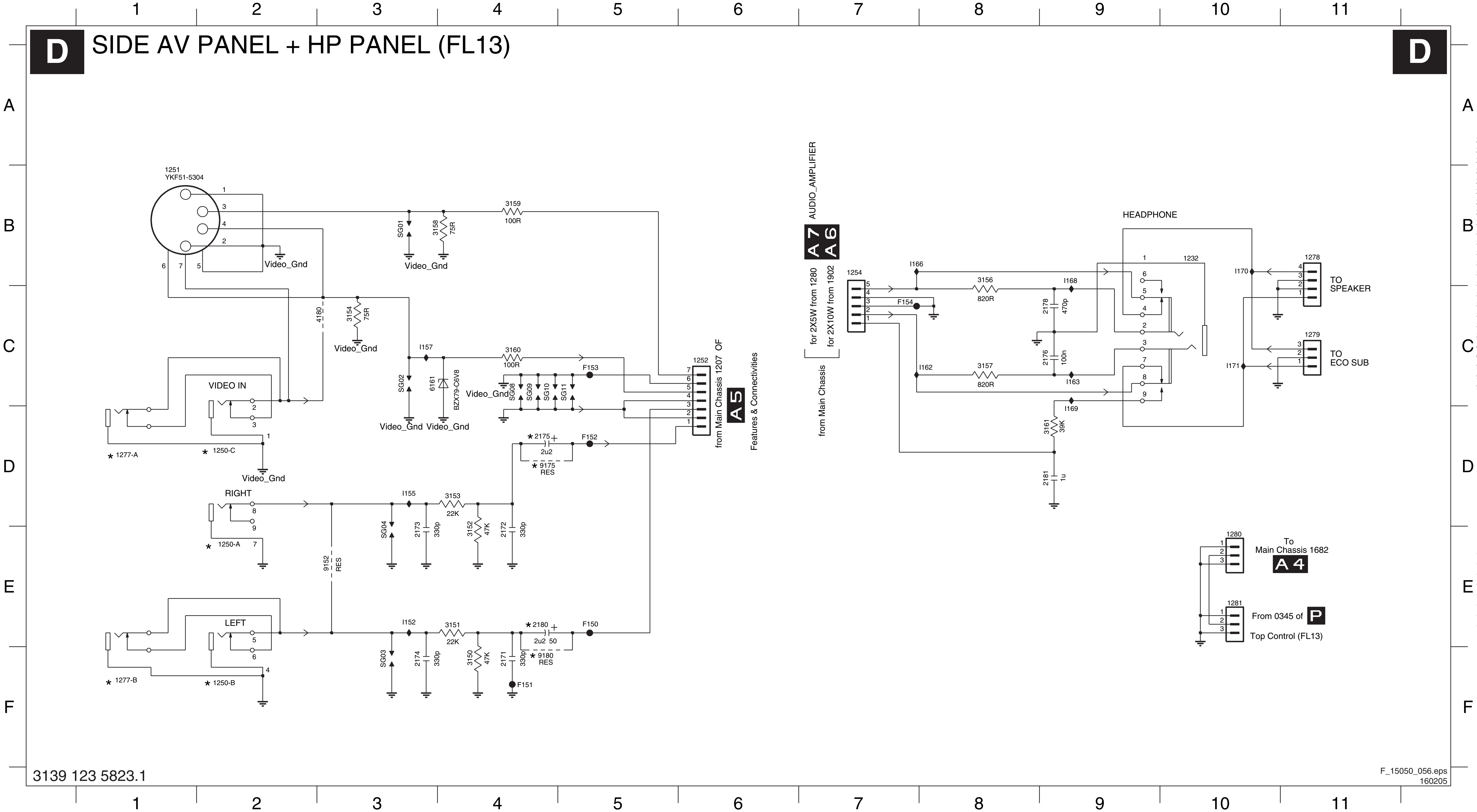


Layout Side AV + HP Panel (PV0-2) (Bottom Side)

2176	A1	2178	A1	2181	A2	3161	A2	4180	A3

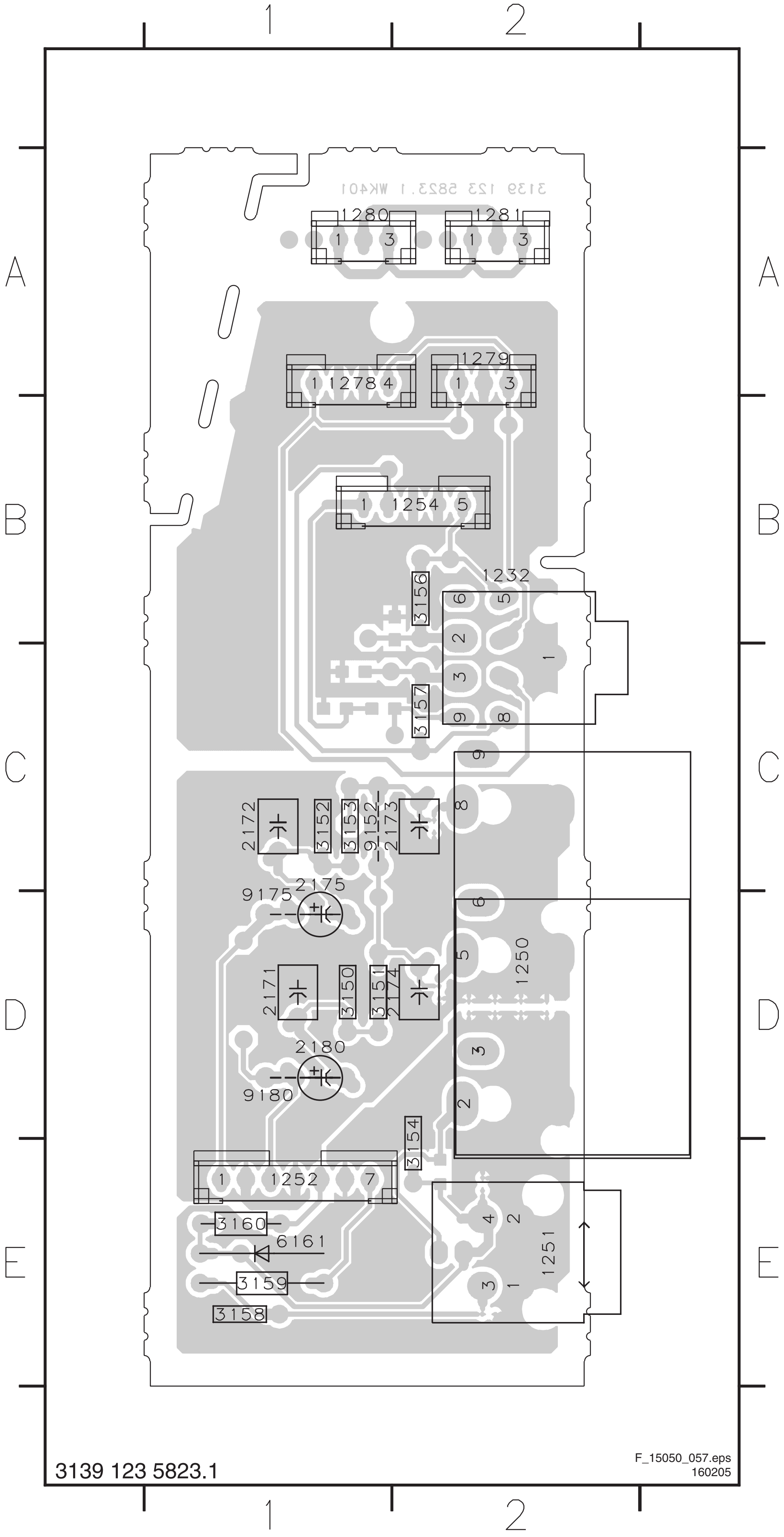


Side AV + HP Panel (FL13)



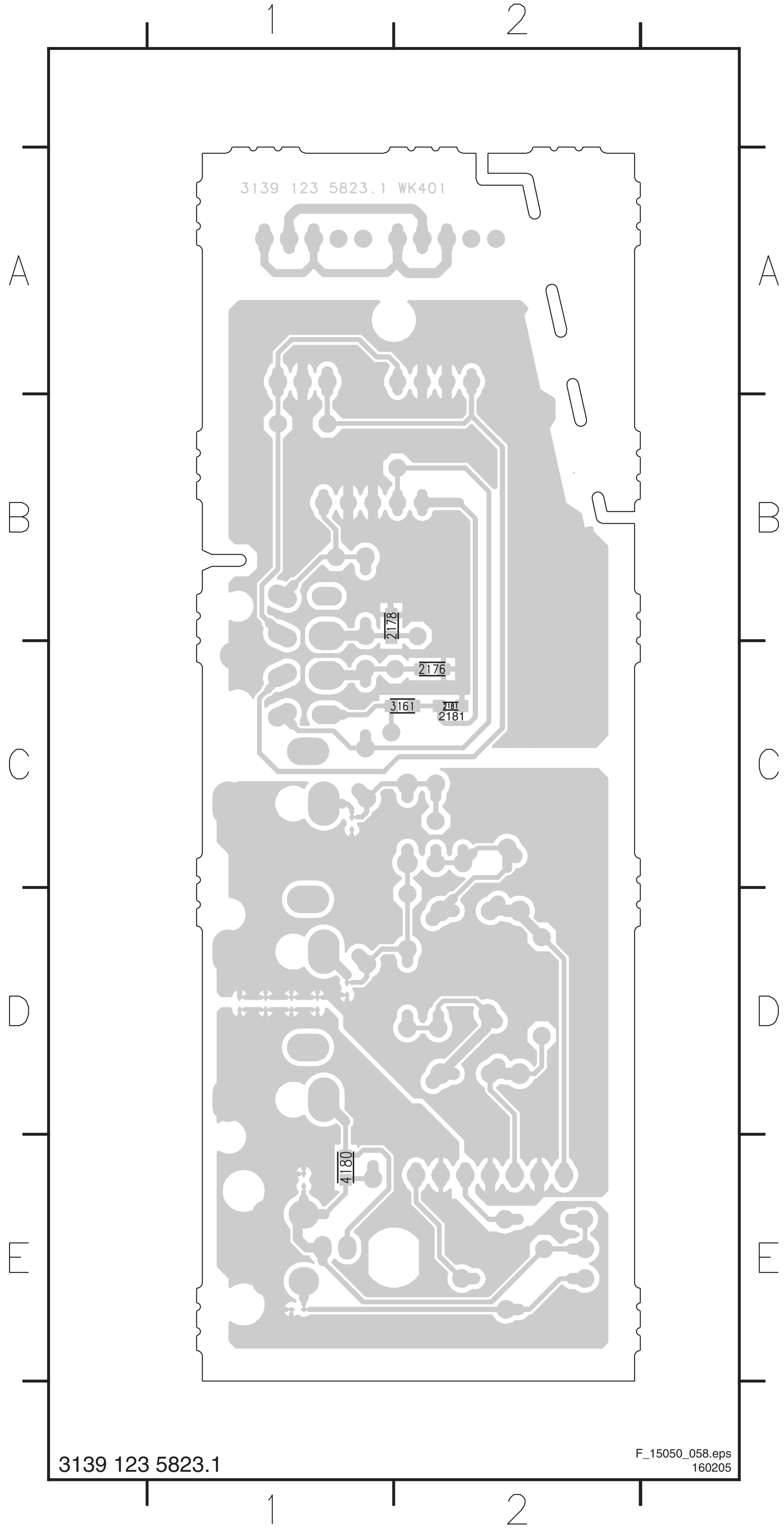
1232 B10
1250-A E2
1250-B F2
1250-C D2
1251 B1
1252 C6
1254 B7
1277-A D1
1277-B F1
1278 B11
1279 C11
1280 E10
1281 E10
2171 F4
2172 E4
2173 E3
2174 F3
2175 D4
2176 C9
2178 C9
2180 E4
2181 D9
3150 F4
3151 E4
3152 E4
3153 D4
3154 C3
3156 B8
3157 C8
3158 B4
3159 B4
3160 C4
3161 D9
4180 C3
6161 C3
9152 E3
9175 D4
9180 F4
F150 E5
F151 F4
F152 D5
F153 C5
F154 C7
I152 E3
I155 D3
I157 C3
I162 C8
I163 C9
I166 B7
I168 B9
I169 D9
I170 B10
I171 C10
SG01 B3
SG02 C3
SG03 F3
SG04 E3
SG08 C4
SG09 C4
SG10 C4
SG11 C5

Layout Side AV + HP Panel (FL13) (Top Side)



1232	B2
1250	D2
1251	E2
1252	E1
1254	B2
1277	D2
1278	A1
1279	A2
1280	A1
1281	A2
2171	D1
2172	C1
2173	C1
2174	D2
2175	C1
2180	D1
3150	D1
3151	D1
3152	C1
3153	C1
3154	E2
3156	B2
3157	C2
3158	E1
3159	E1
3160	E1
6161	E1
9152	C1
9175	D1
9180	D1

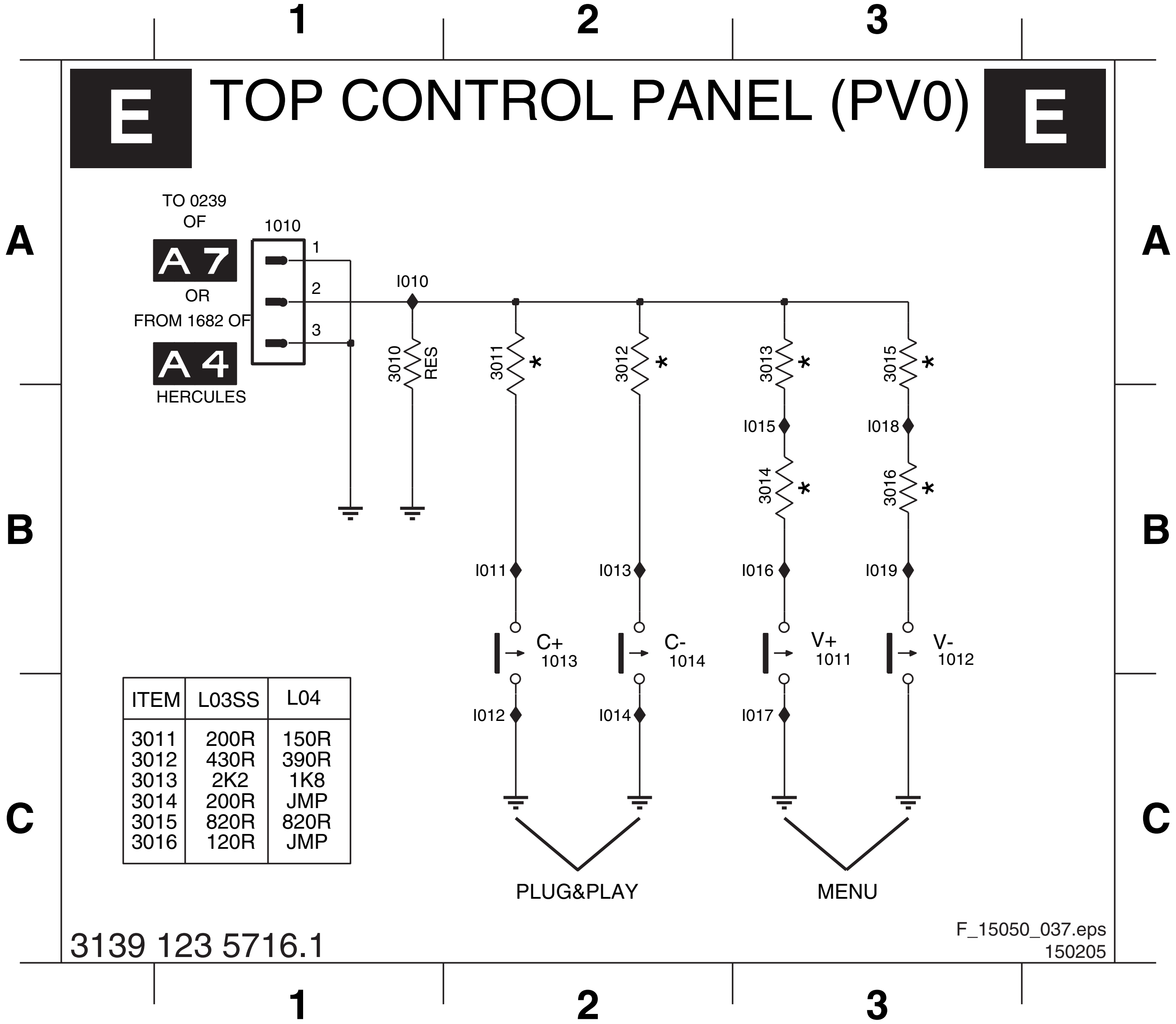
Layout Side AV + HP Panel (FL13) (Bottom Side)



2176	C2
2178	B1
2181	C2
3161	C2
4180	E1

Top Control Panel (PV0)

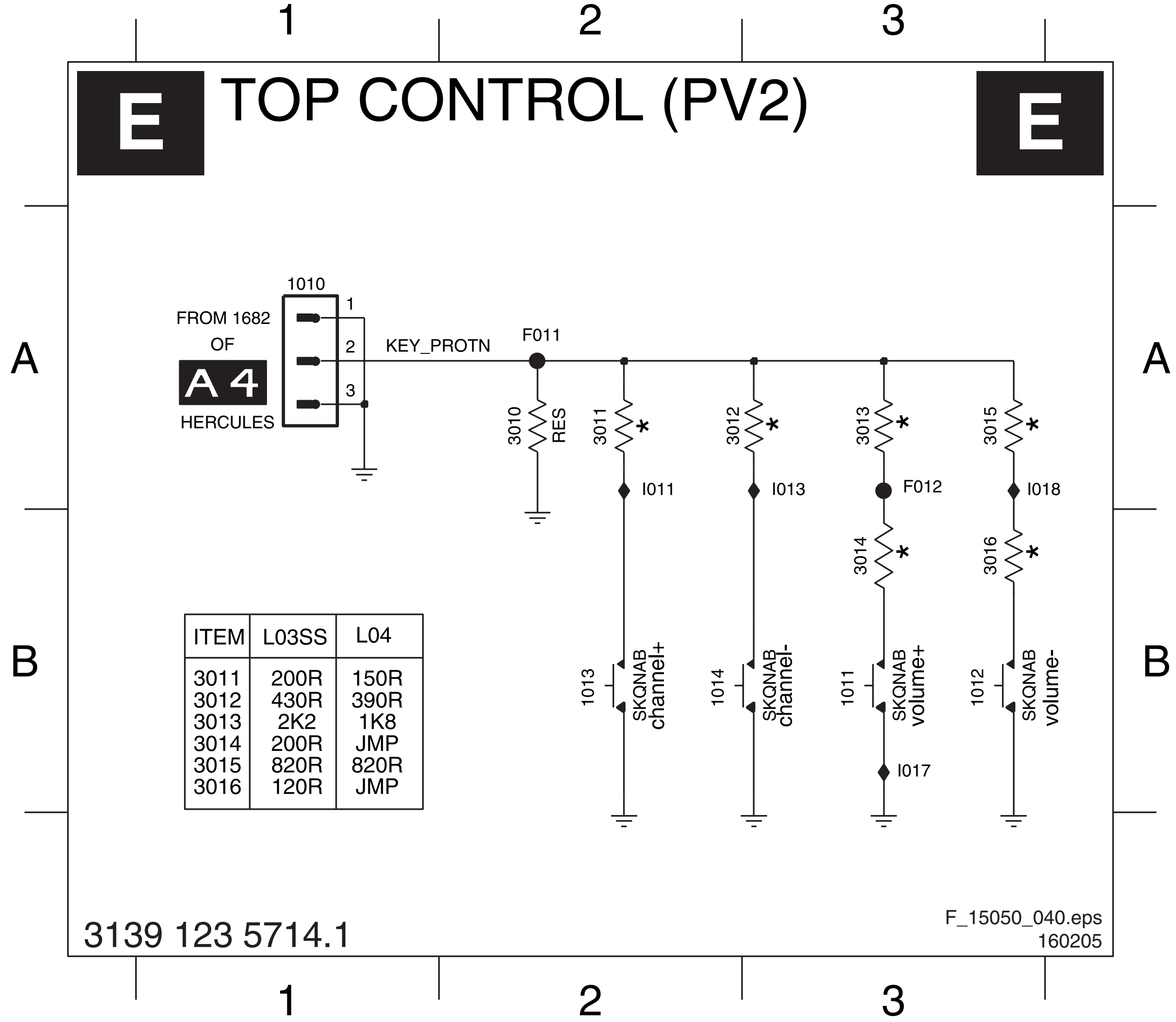
1010 A1	1013 B2	3011 A2	3014 B3	I010 A1	I013 B2	I016 B3	I019 B3
1011 B3	1014 B2	3012 A2	3015 A3	I011 B2	I014 C2	I017 C3	
1012 B3	3010 A1	3013 A3	3016 B3	I012 C2	I015 B3	I018 B3	



ITEM	L03SS	L04
3011	200R	150R
3012	430R	390R
3013	2K2	1K8
3014	200R	JMP
3015	820R	820R
3016	120R	JMP

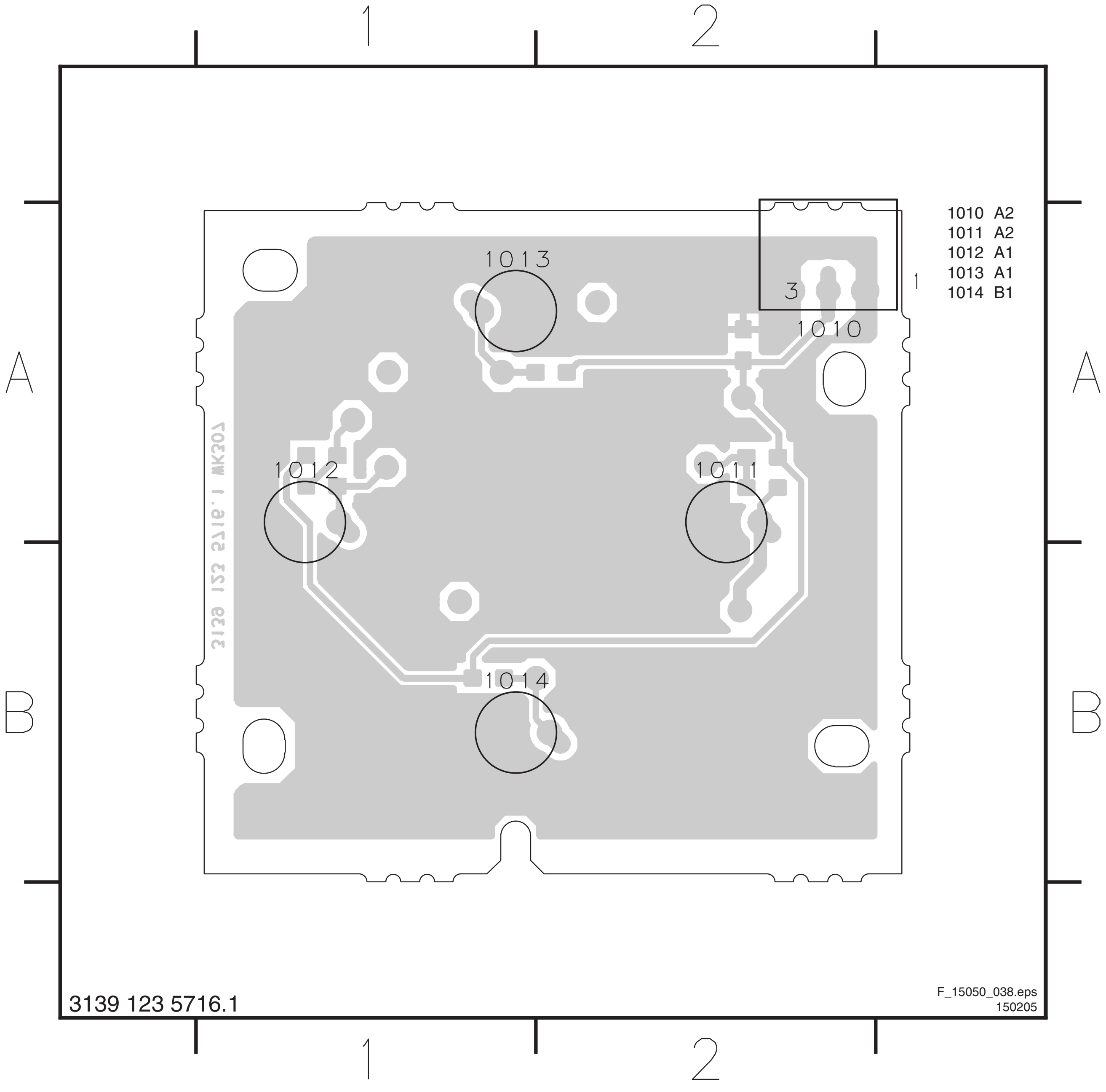
Top Control Panel (PV2)

1010 A1	1013 B2	3011 A2	3014 B3	F011 A2	I013 A3
1011 B3	1014 B2	3012 A2	3015 A3	F012 A3	I017 B3
1012 B3	3010 A2	3013 A3	3016 B3	I011 A2	I018 A3



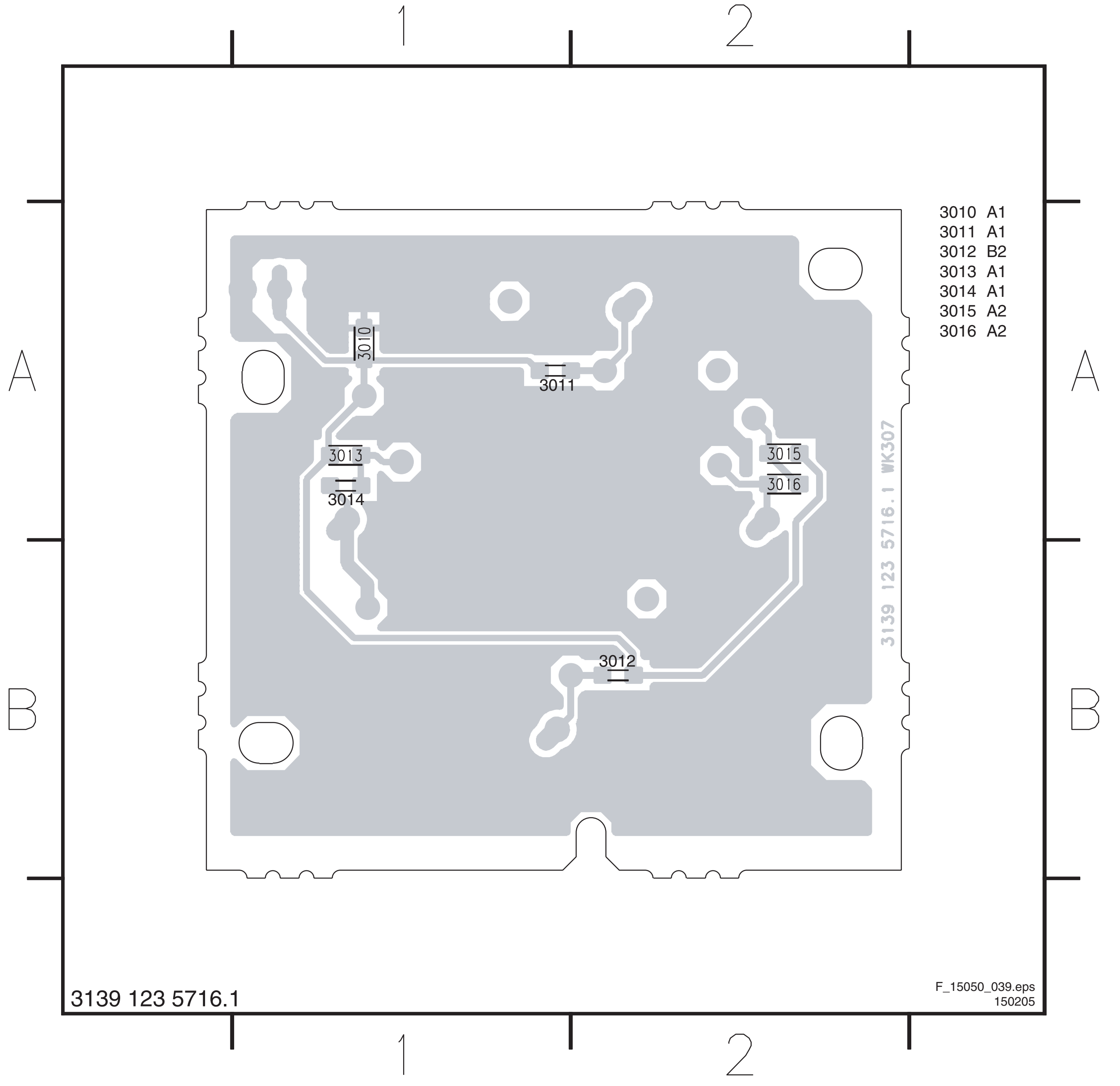
ITEM	L03SS	L04
3011	200R	150R
3012	430R	390R
3013	2K2	1K8
3014	200R	JMP
3015	820R	820R
3016	120R	JMP

Layout Top Control Panel (PV0) (Top Side)



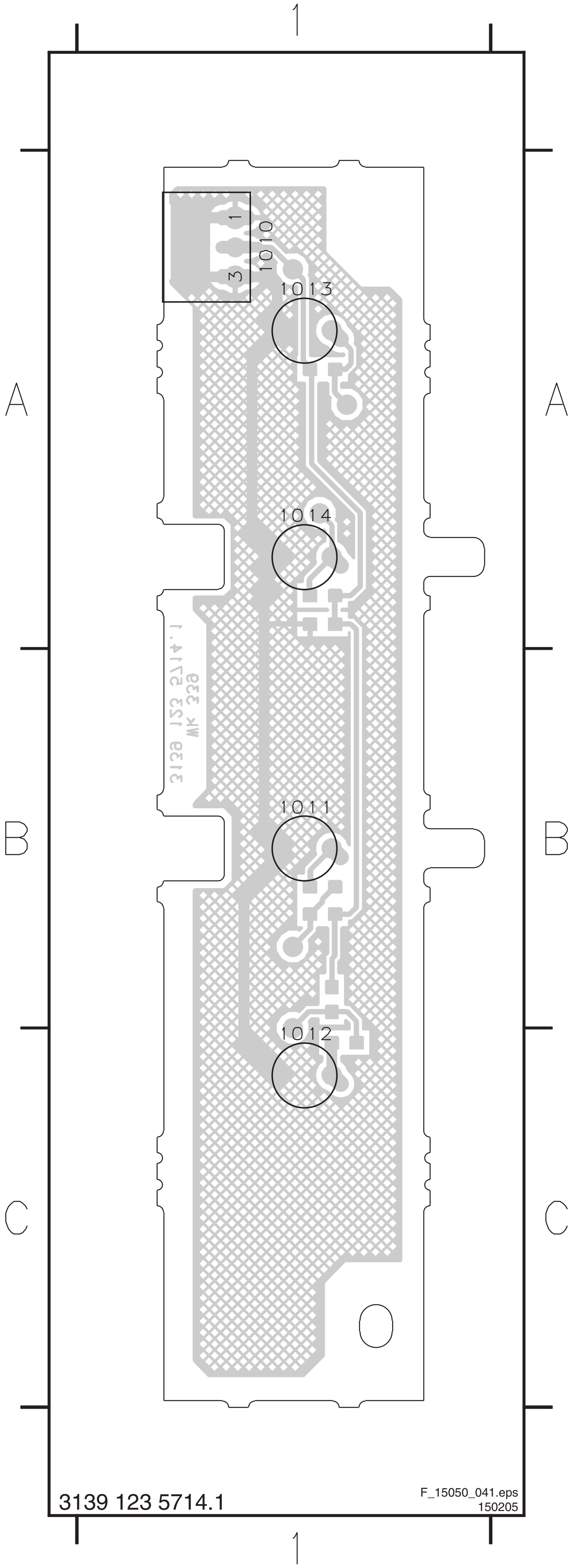
1010	A2
1011	A2
1012	A1
1013	A1
1014	B1

Layout Top Control Panel (PV0) (Bottom Side)



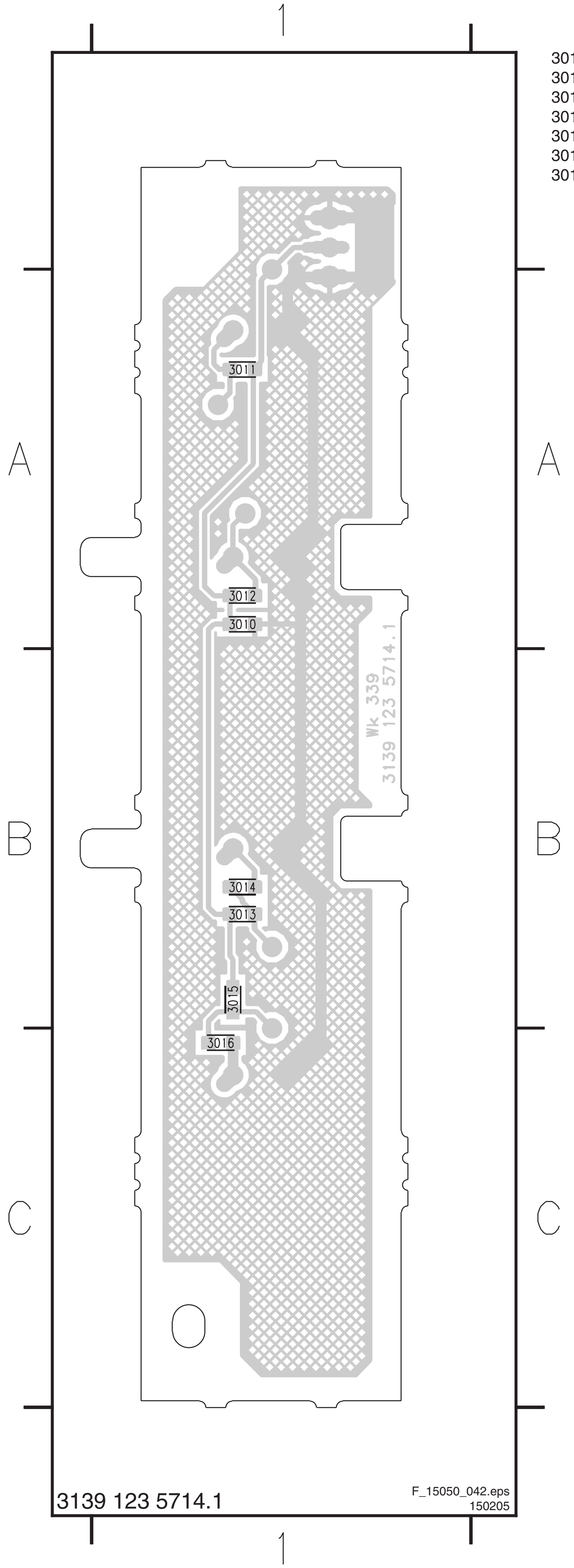
3010	A1
3011	A1
3012	B2
3013	A1
3014	A1
3015	A2
3016	A2

Layout Top Control Panel (PV2) (Top Side)



1010 A1
1011 B1
1012 C1
1013 A1
1014 A1

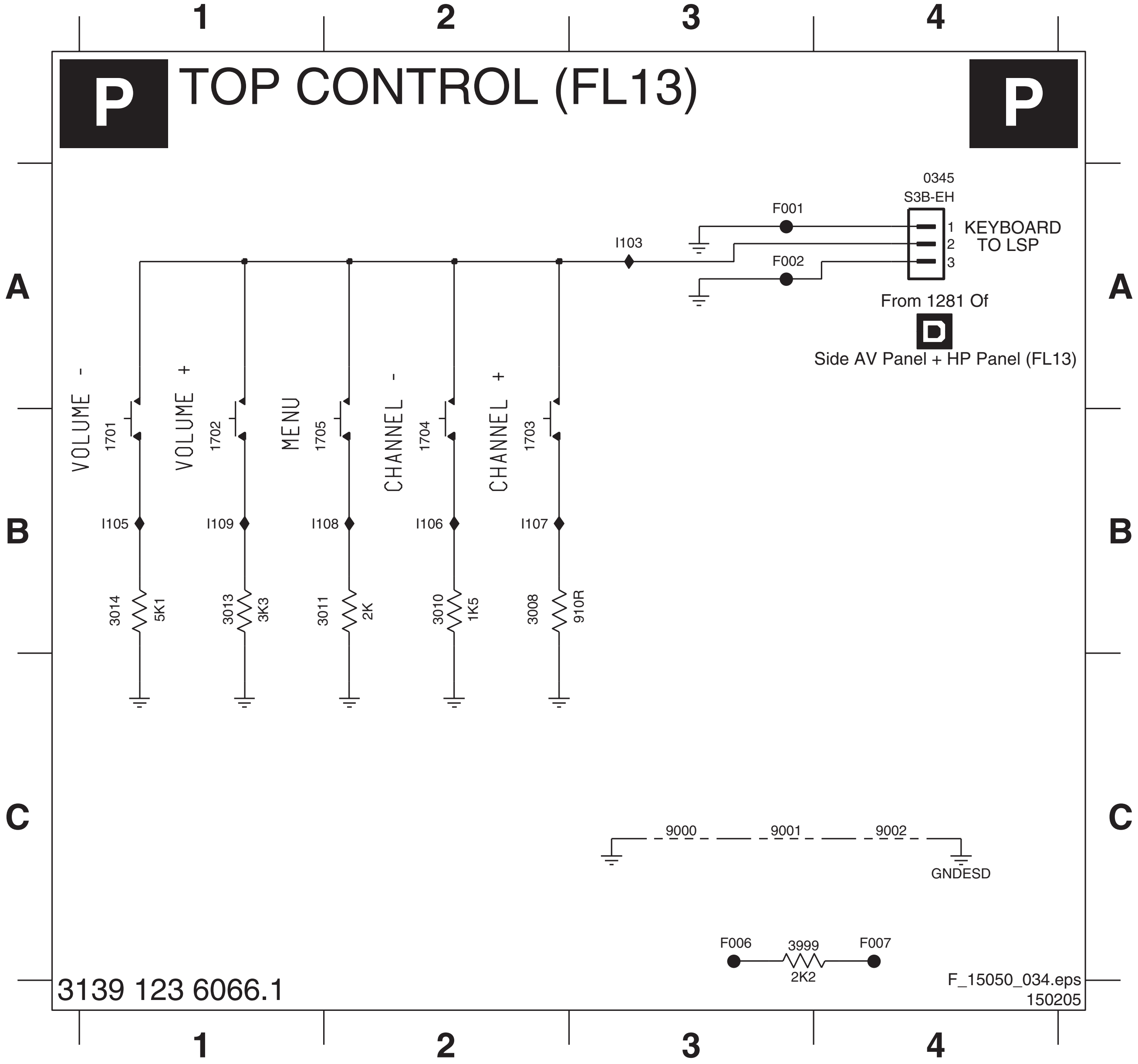
Layout Top Control Panel (PV2) (Bottom Side)



3010 A1
3011 A1
3012 A1
3013 B1
3014 B1
3015 B1
3016 C1

Top Control Panel (FL13)

0345 A4	1703 B2	3008 B2	3013 B1	9000 C3	F001 A3	F007 C4	I106 B2	I109 B1
1701 B1	1704 B2	3010 B2	3014 B1	9001 C3	F002 A3	I103 A3	I107 B2	
1702 B1	1705 B2	3011 B1	3999 C3	9002 C4	F006 C3	I105 B1	I108 B2	

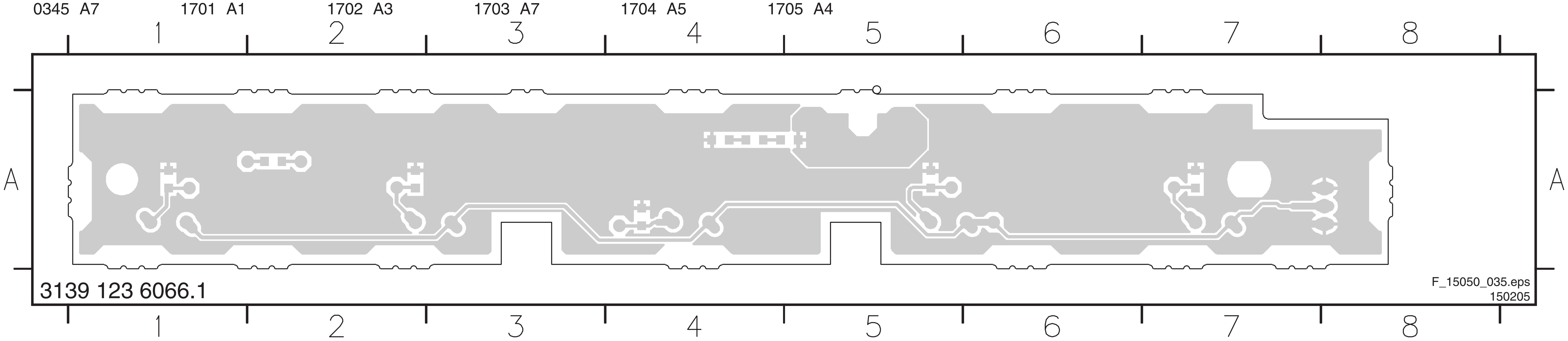


Personal Notes:

E_06532_012.eps
131004

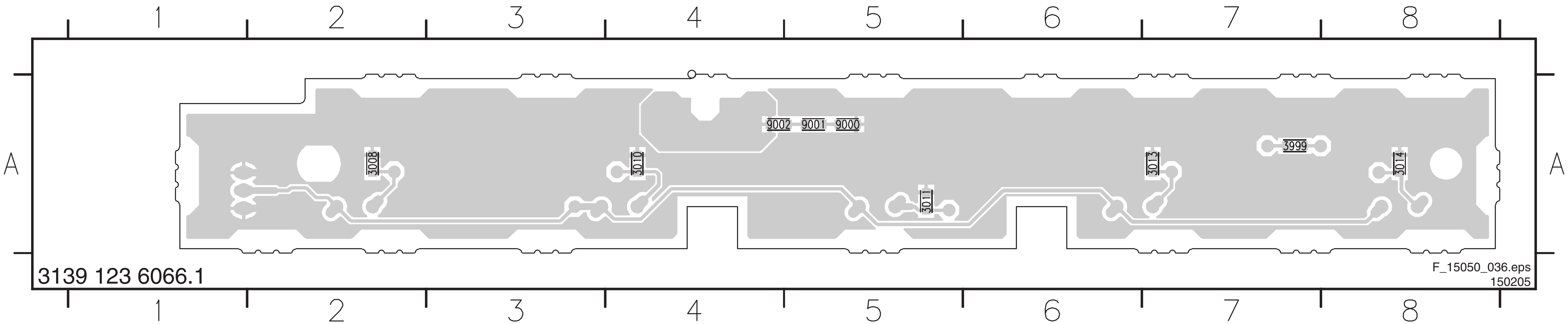
Layout Top Control Panel (FL13) (Top Side)

0345 A7 1701 A1 1702 A3 1703 A7 1704 A5 1705 A4

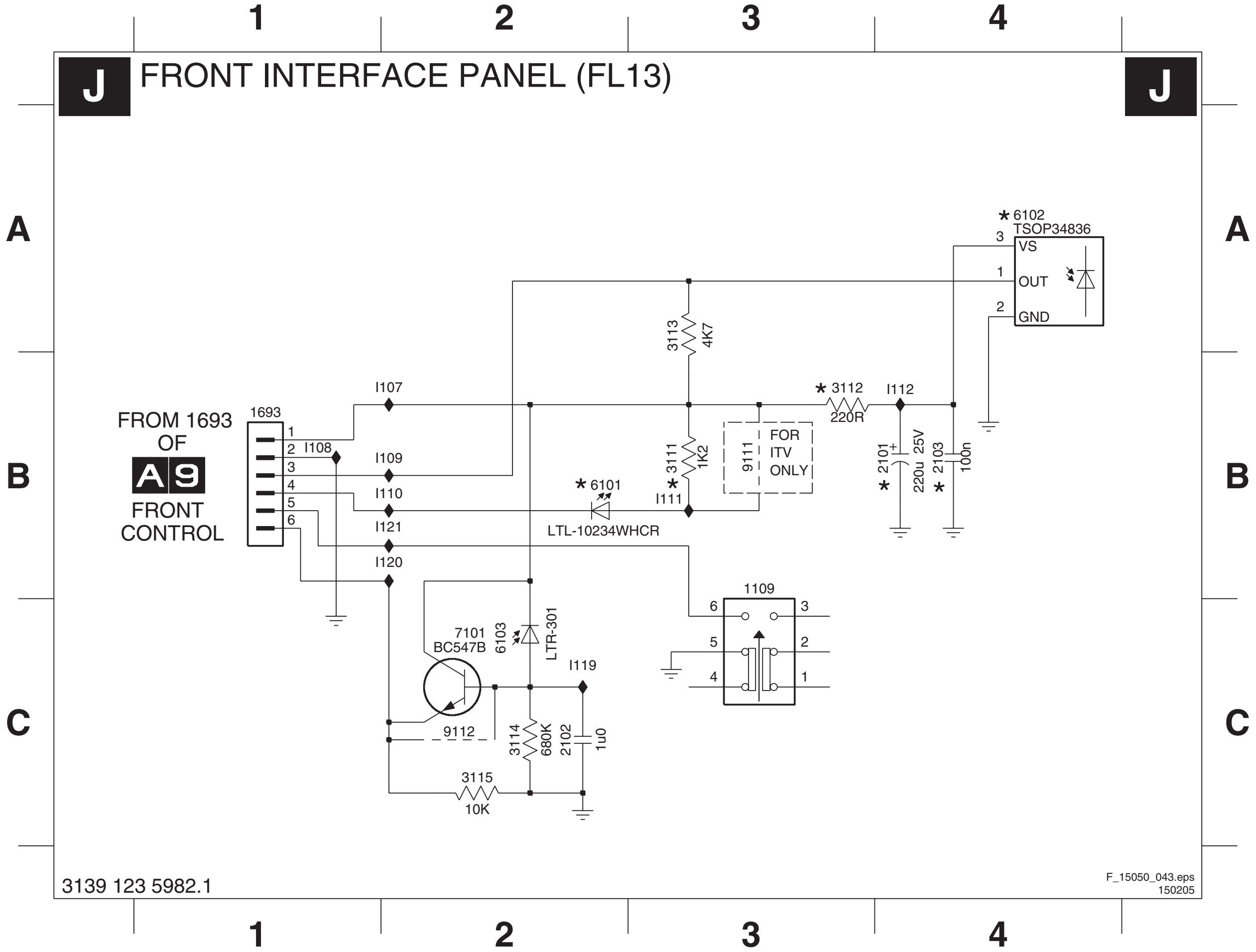


Layout Top Control Panel (FL13) (BottomSide)

3008 A1 3010 A3 3011 A4 3013 A6 3014 A7 3999 A6 9000 A4 9001 A4 9002 A3

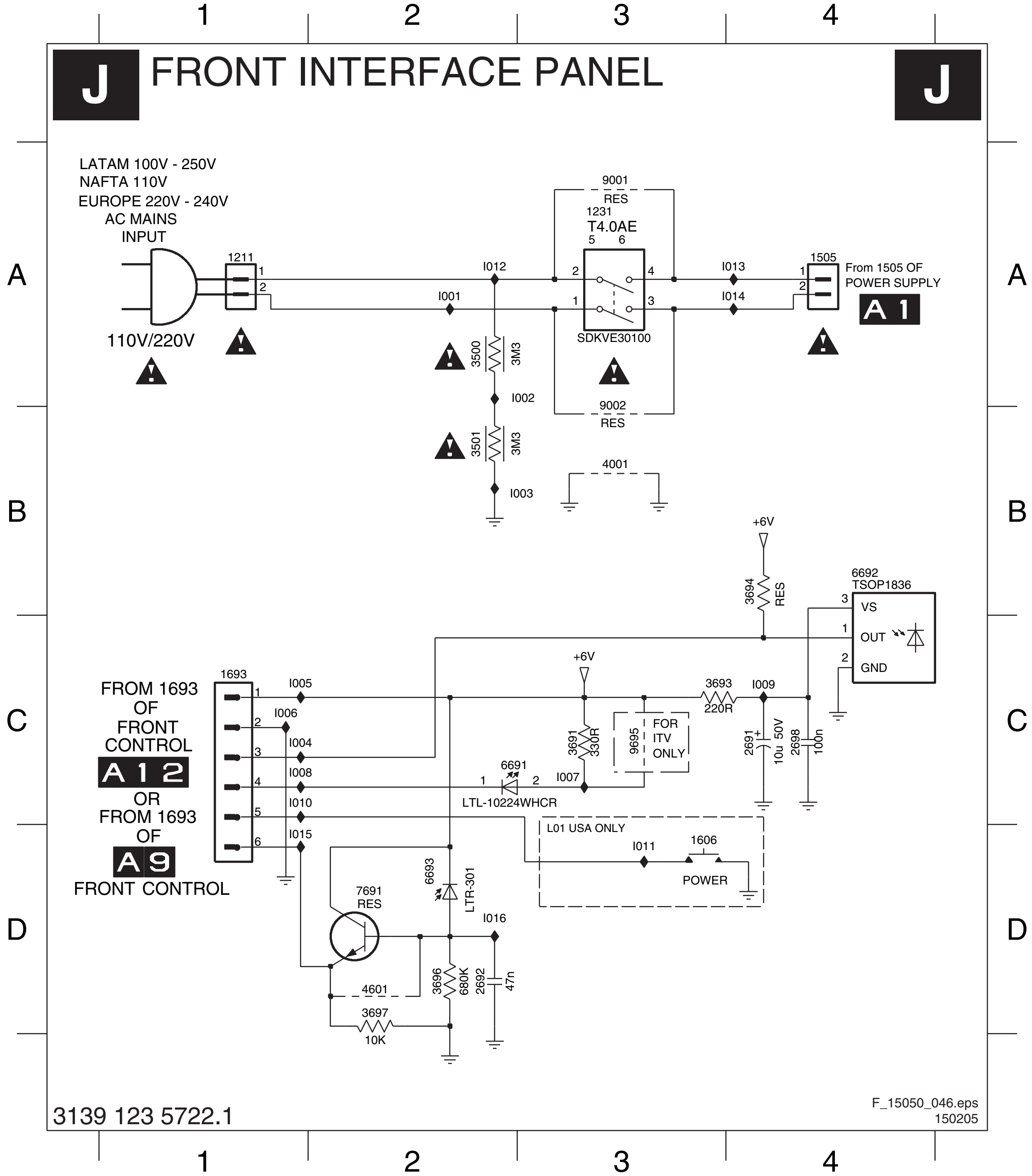


Front Interface Panel (FL13)



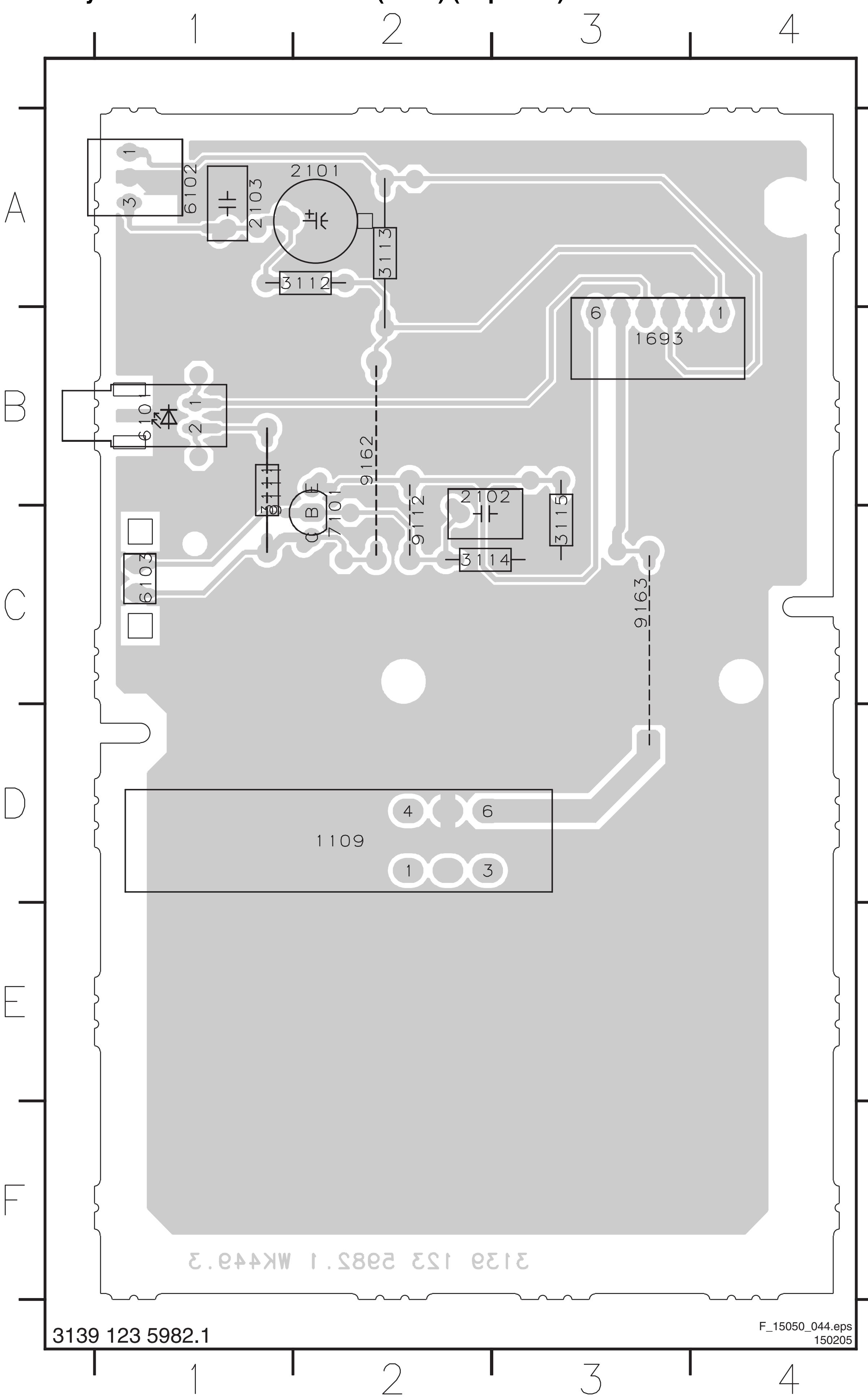
1109 B3
1693 B1
2101 B4
2102 C2
2103 B4
3111 B3
3112 B3
3113 A3
3114 C2
3115 C2
6101 B2
6102 A4
6103 C2
7101 C2
9111 B3
9112 C2
I107 B2
I108 B1
I109 B2
I110 B2
I111 B3
I112 B4
I119 C2
I120 B2
I121 B2

Front Interface Panel (PV0-2)



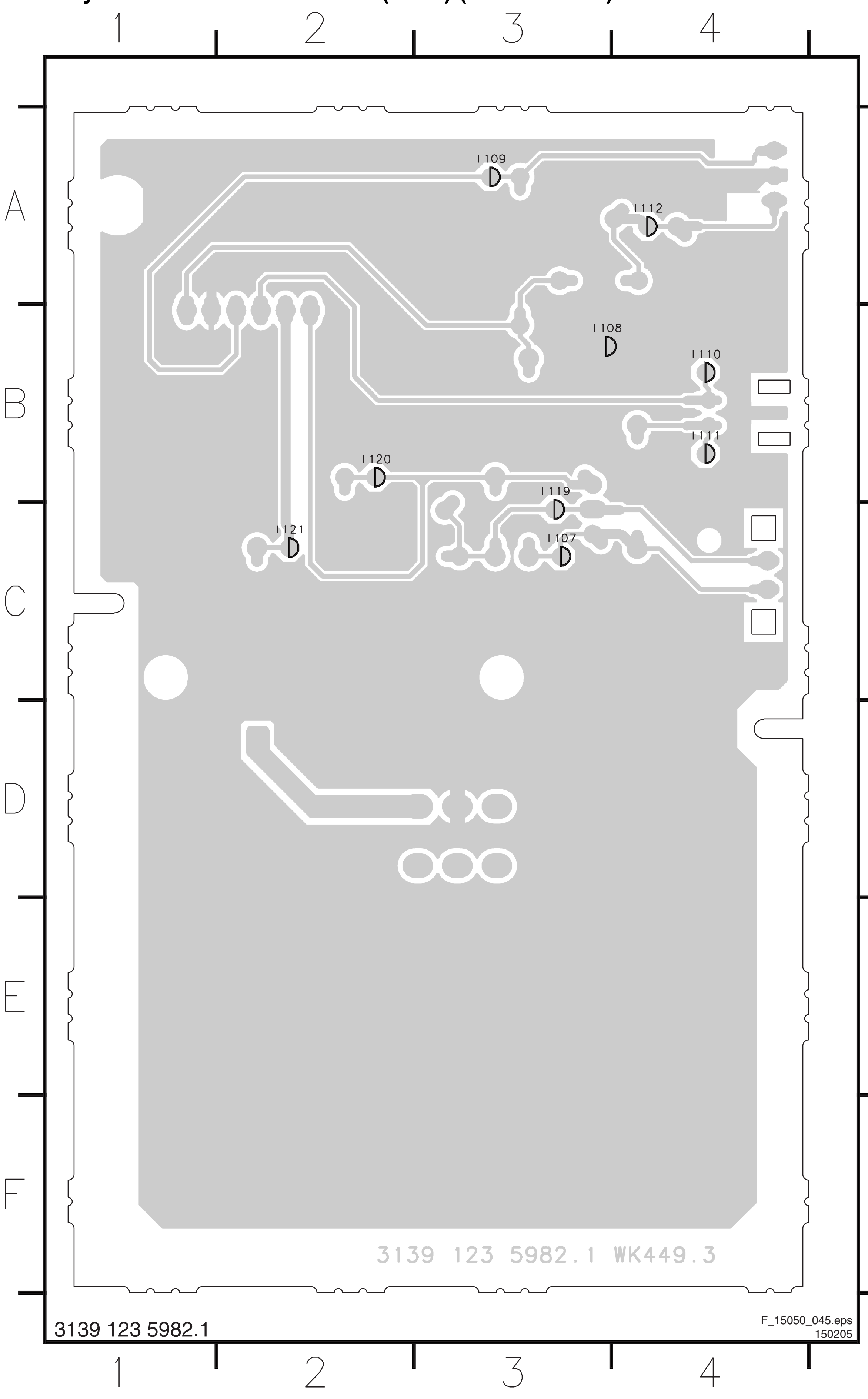
1211 A1
1231 A3
1505 A4
1606 D3
1693 C1
2691 C4
2692 D2
2698 C4
3500 A2
3501 B2
3691 C3
3693 C3
3694 B4
3696 D2
3697 D2
4001 B3
4601 D2
6691 C3
6692 B4
6693 D2
7691 D2
9001 A3
9002 B3
9695 C3
I001 A2
I002 A3
I003 B3
I004 C1
I005 C1
I006 C1
I007 C3
I008 C1
I009 C4
I010 C1
I011 D3
I012 A2
I013 A4
I014 A4
I015 D1
I016 D2

Layout Front Interface Panel (FL13) (Top Side)



1109	B1
1693	A2
2101	A1
2102	A2
2103	A1
3111	A1
3112	A1
3113	A1
3114	A2
3115	A2
6101	A1
6102	A1
6103	A1
7101	A1
9111	A1
9112	A1
9162	A1
9163	A2

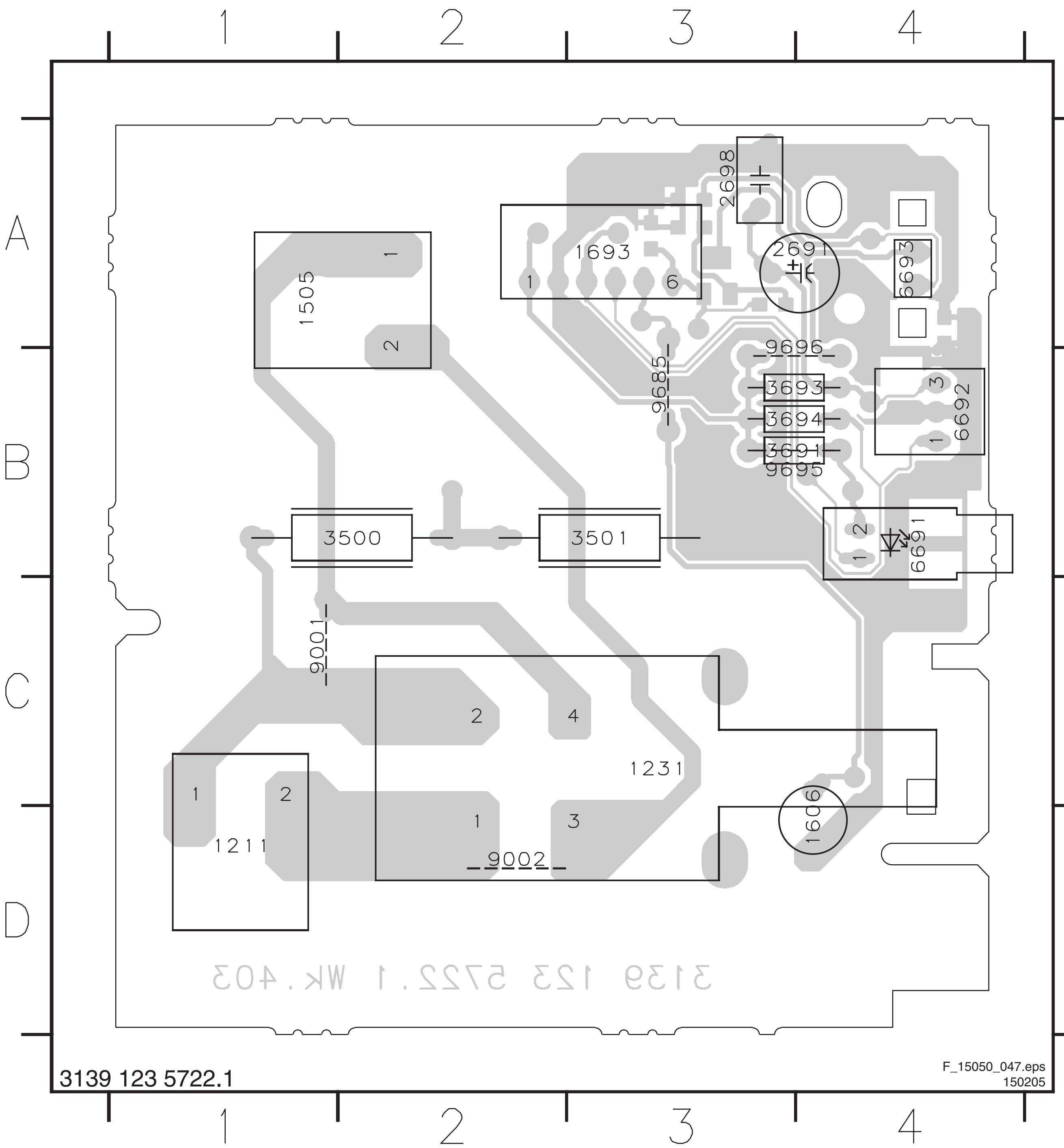
Layout Front Interface Panel (FL13) (Bottom Side)



I107	A2
I108	A2
I109	A2
I110	A2
I111	A2
I112	A2
I119	A2
I120	A1
I121	A1

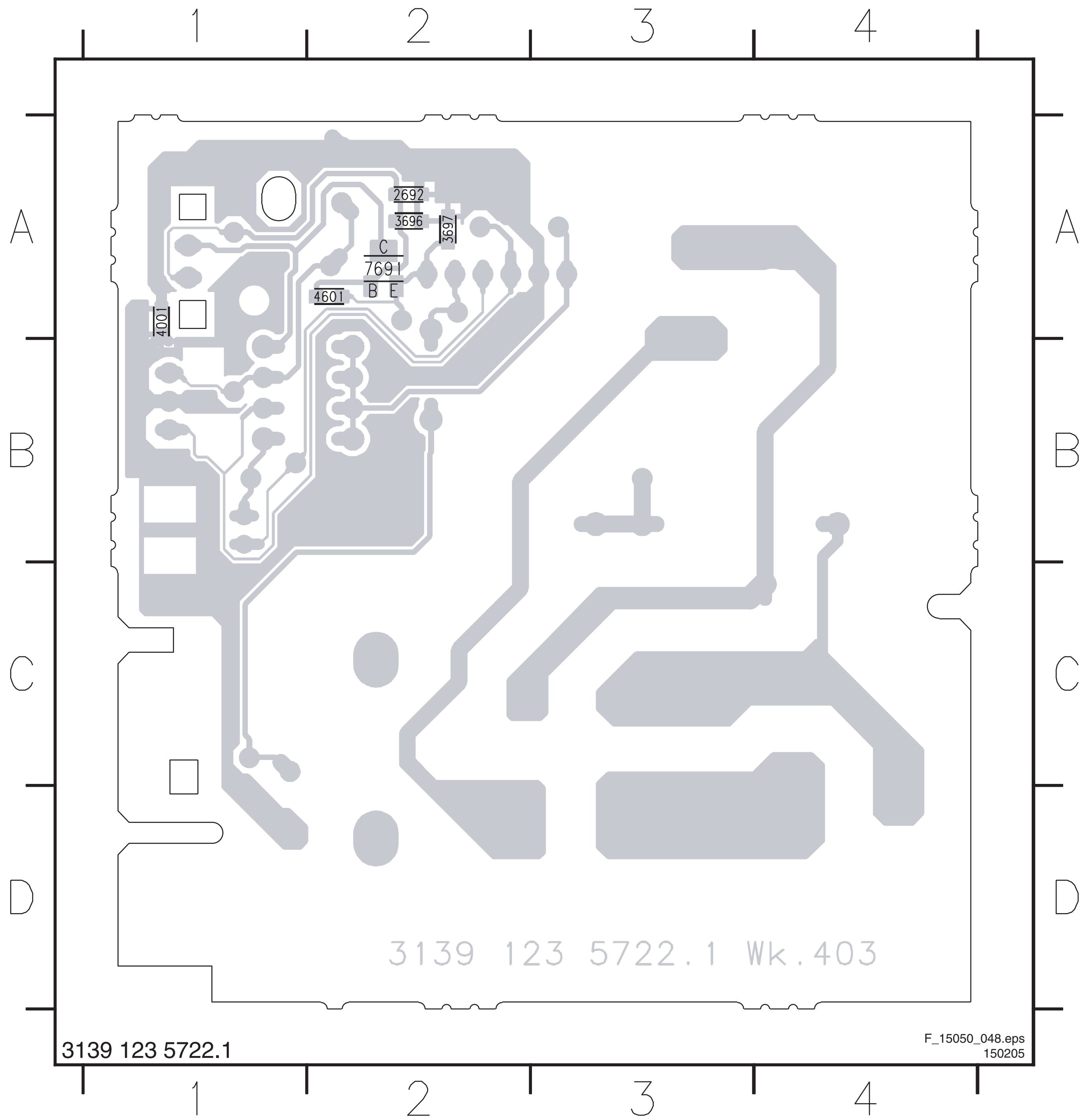
Layout Front Interface Panel (PV0-2) (Top Side)

1211 D1	1505 A1	1693 A3	2698 A3	3501 B3	3693 B3	6691 B4	6693 A4	9002 D2	9695 B3
1231 C3	1606 D4	2691 A4	3500 B2	3691 B3	3694 B3	6692 B4	9001 C1	9685 B3	9696 A3

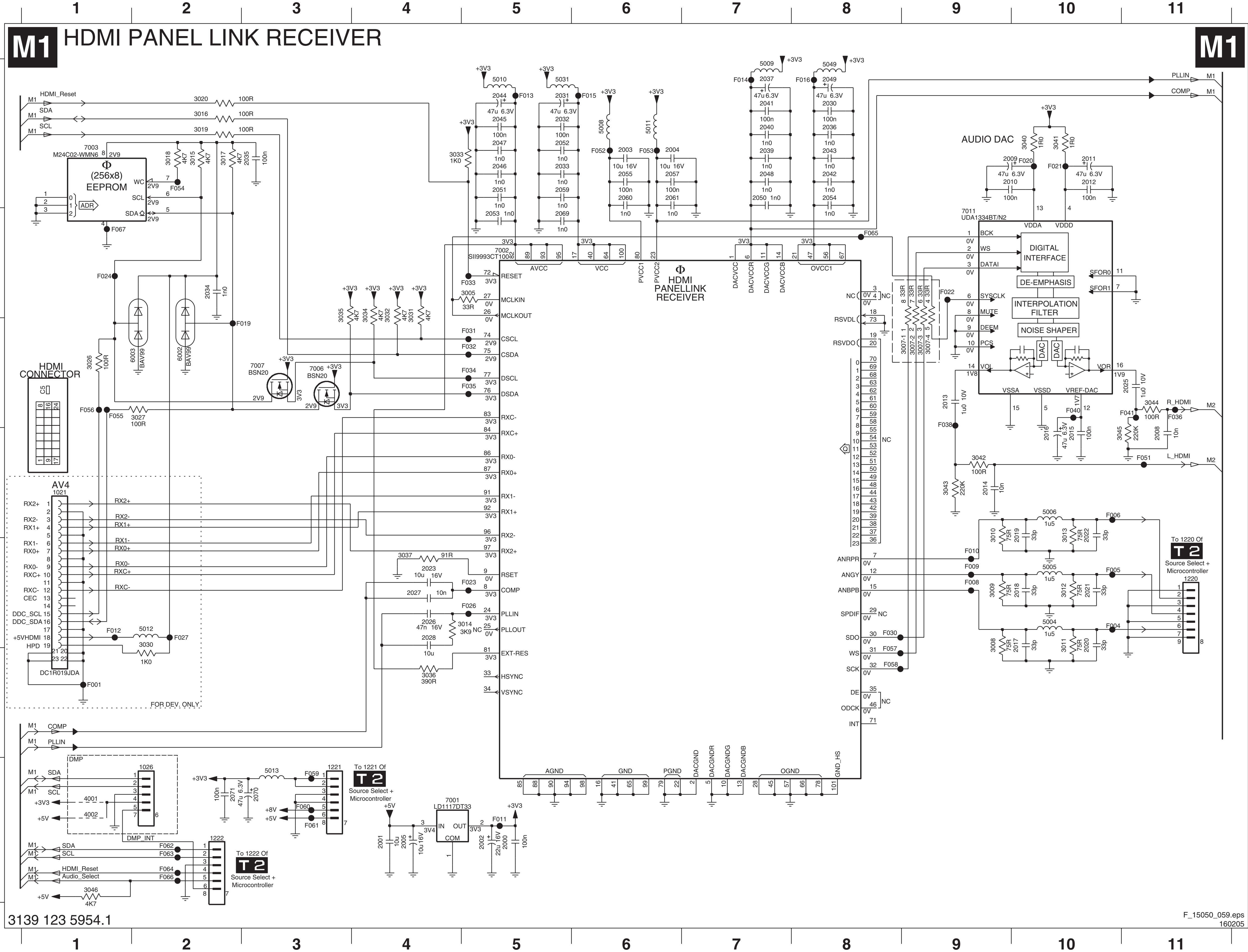


Layout Front Interface Panel (PV0-2) (Bottom Side)

2692 A2	3696 A2	3697 A2	4001 A1	4601 A2	7691 A2

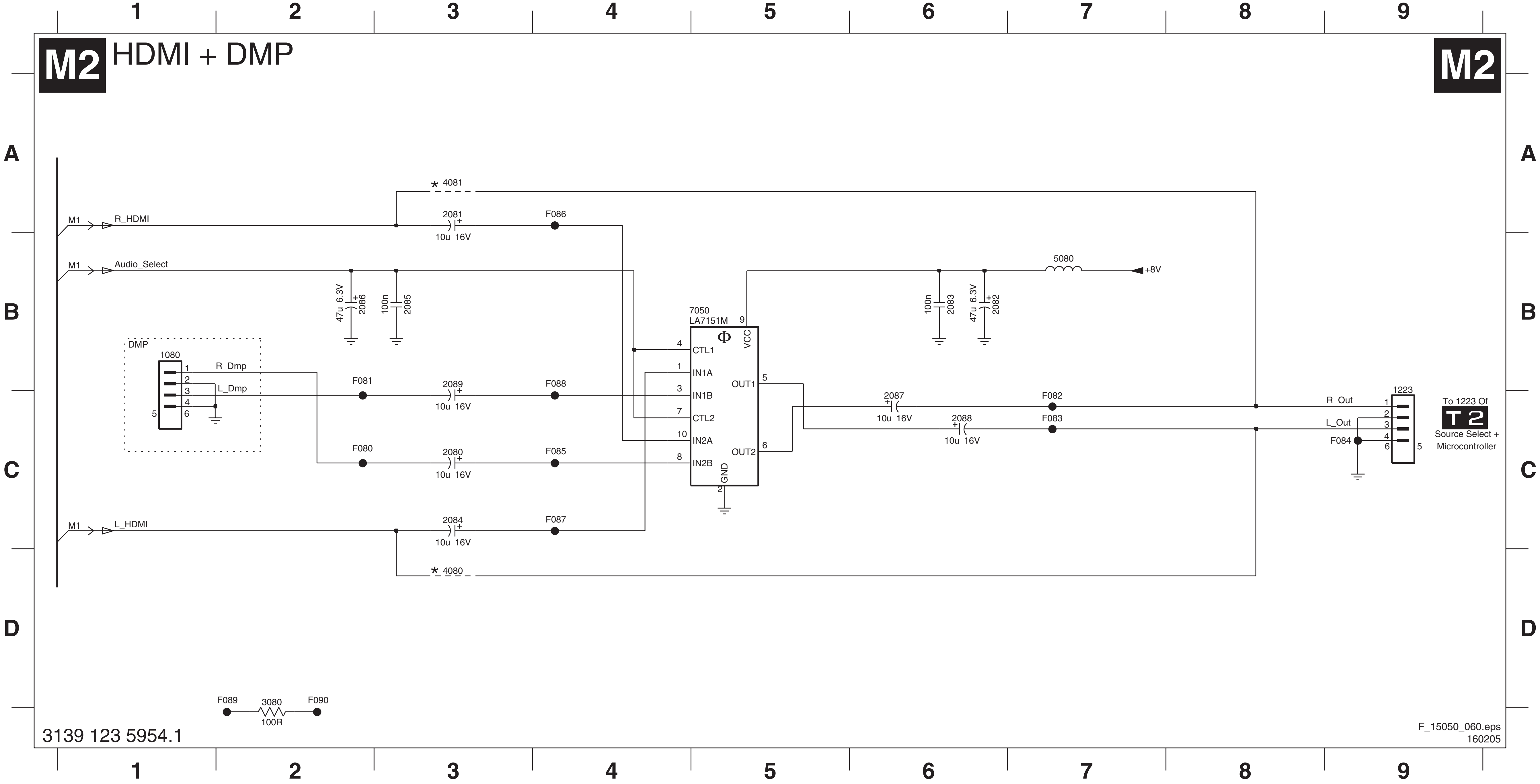


HDMI Link Receiver



1021 D1
1026 G2
1220 E11
1221 G3
1222 G2
2000 G5
2001 G4
2002 G5
2003 A6
2004 A6
2005 G4
2008 D11
2009 A9
2010 A9
2011 A10
2012 A10
2013 C9
2014 D9
2015 D10
2016 D10
2017 E10
2018 E10
2019 D10
2020 E10
2021 E10
2022 D10
2023 E4
2025 C11
2026 E4
2027 E4
2028 E4
2030 A8
2031 A5
2032 A5
2033 A5
2034 B2
2035 A3
2036 A8
2037 A7
2039 A7
2040 A7
2041 A7
2042 A8
2043 A8
2044 A5
2045 A5
2046 A5
2047 A5
2048 A7
2049 A8
2050 A7
2051 A5
2052 A5
2053 B5
2054 A8
2055 A6
2057 A6
2059 A5
2060 A6
2061 A6
2069 B5
2070 G3
2071 G2
3005 B5
3007-1 C8
3007-2 C9
3007-3 C9
3007-4 C9
3008 E9
3009 E9
3010 D9
3011 E10
3012 E10
3013 D10
3014 E5
3015 A2
3016 A2
3017 A2
3018 A2
3019 A2
3020 A2
3026 C1
3027 C2
3030 E2
3031 B4
3032 B4
3033 A4
3034 B4
3035 B3
3036 F4
3037 E4
3040 A10
3041 A10
3042 D9
3043 D9
3044 C11
3045 D10
3046 G1
4001 G1
4002 G1
5004 E10
5005 E10
5006 D10
5008 A6
5009 A7
5010 A5
5011 A6
5012 E2
5013 G3
5031 A5
5049 A8
6002 C2
6003 C1
7001 G4
7002 B5
7003 A1
7006 C3
7007 C3
7011 B9
F001 F1
F004 E10
F005 E10
F006 D10
F008 E9
F009 E9
F010 E9
F011 G5
F012 E1
F013 A5
F014 A7
F015 A6
F016 A8
F019 C3
F020 A10
F021 A10
F022 B9
F023 E5
F024 B1
F026 E5
F027 E2
F030 E8
F031 C5
F032 C5
F033 B5
F034 C5
F035 C5
F036 C11
F038 C9
F040 C10
F041 C11
F051 D11
F052 A6
F053 A6
F054 A2
F055 C1
F056 C1
F057 F8
F058 F8
F059 G3
F060 G3
F061 G3
F062 G2
F063 G2
F064 G2
F065 B8
F066 G2
F067 B1

HDMI + DMP



1080 B1
1223 C9
2080 C3
2081 A3
2082 B6
2083 B6
2084 C3
2085 B3
2086 B2
2087 C6
2088 C6
2089 B3
3080 D2
4080 D3
4081 A3
5080 B7
7050 B4
F080 C2
F081 B2
F082 C7
F083 C7
F084 C9
F085 C4
F086 A4
F087 C4
F088 B4
F089 D2
F090 D2

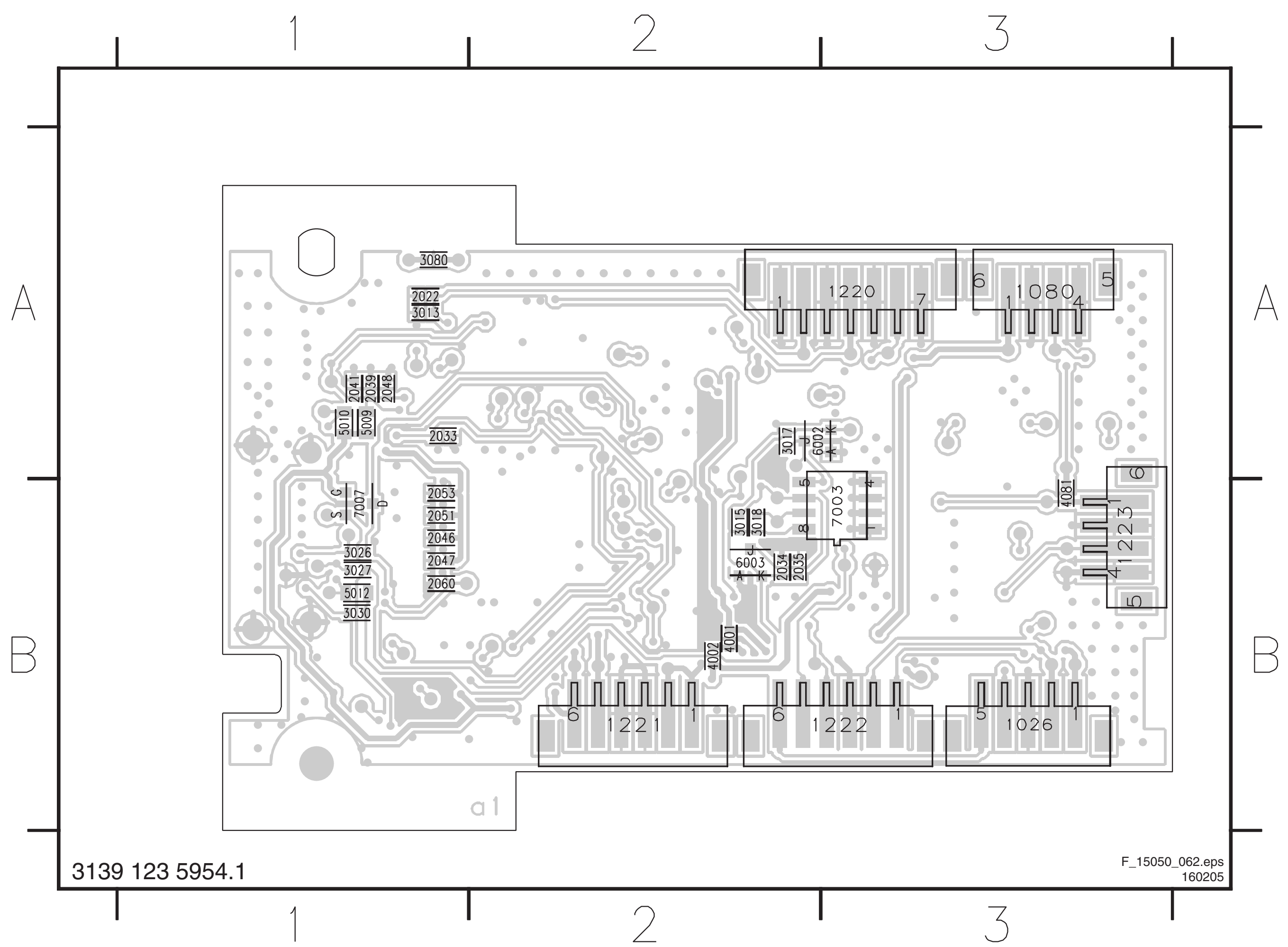
Layout HDMI Panel (Top Side)

1021	B3	2008	A2	2015	A2	2023	A3	2032	B2	2045	A3	2059	B2	2082	A1	2089	A1	3012	A3	3033	B3	3042	A2	5005	A3	5080	A1
2000	B1	2009	A2	2016	A2	2025	A2	2036	A3	2049	B2	2061	A3	2083	A1	3005	A2	3014	A2	3034	B3	3043	A2	5006	A3	7001	B2
2001	B3	2010	A2	2017	A3	2026	A2	2037	A3	2050	A3	2069	B3	2084	B1	3007	A2	3016	B3	3035	B3	3044	A2	5008	B3	7002	A3
2002	B1	2011	B2	2018	A3	2027	A3	2040	A3	2052	A3	2070	B3	2085	B2	3008	A3	3019	B3	3036	B3	3045	A2	5011	A2	7006	B3
2003	B3	2012	B2	2019	A3	2028	A2	2042	B2	2054	B3	2071	B2	2086	B1	3009	A3	3020	B3	3037	A3	3046	B2	5013	B2	7011	A2
2004	A3	2013	A2	2020	A3	2030	B2	2043	B3	2055	B3	2080	A1	2087	A1	3010	A3	3031	B3	3040	A2	4080	B1	5031	B2	7050	A1
2005	B3	2014	A2	2021	A3	2031	A3	2044	A3	2057	A2	2081	A1	2088	B1	3011	A3	3032	B3	3041	B2	5004	A3	5049	B2		

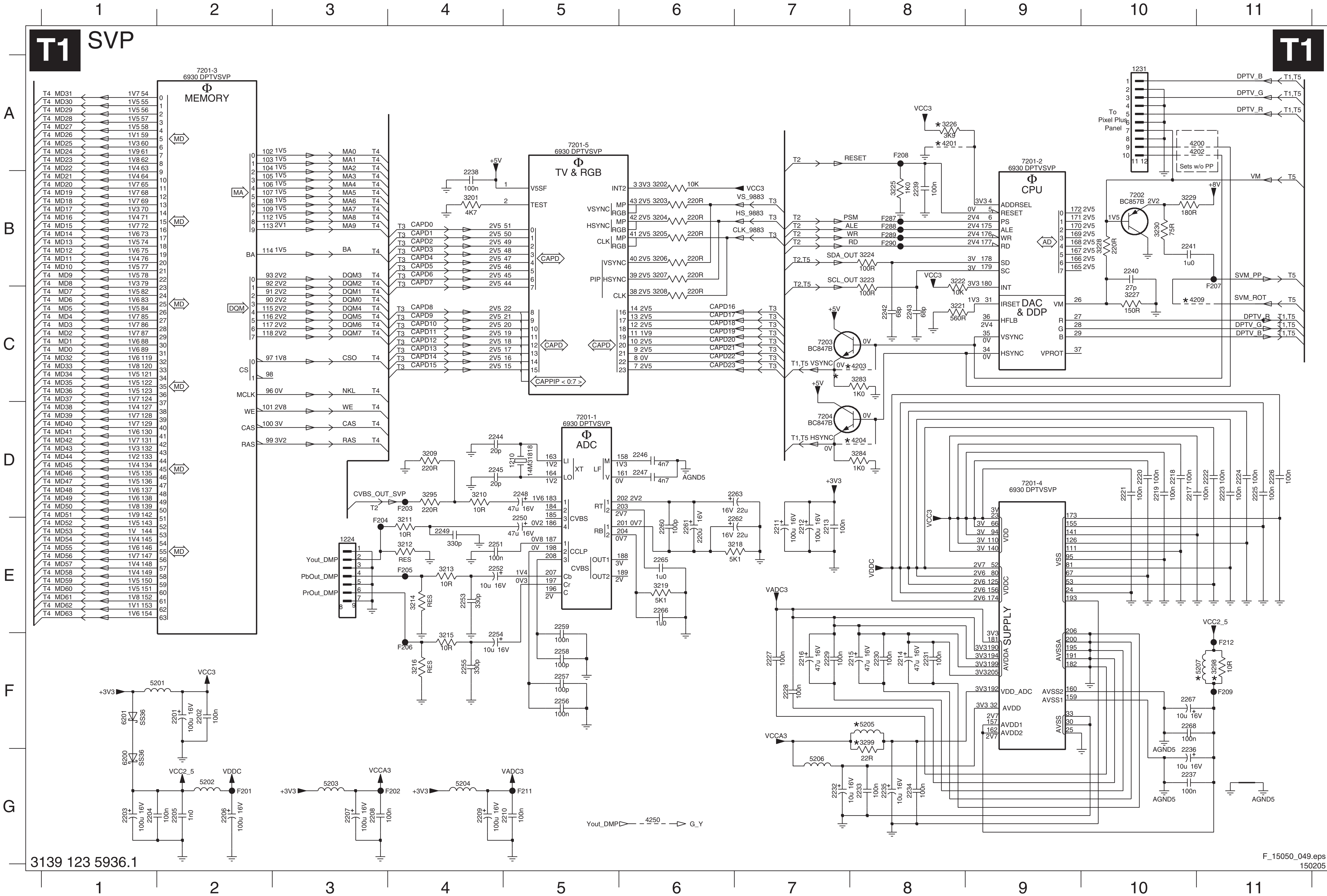


Layout HDMI Panel (Bottom Side)

1026	B3	1222	B2	2034	B2	2046	B1	2053	A1	3017	A2	3030	B1	4081	A3	6002	A2
1080	A3	1223	A3	2035	B2	2047	B1	2060	B1	3018	A2	3080	A1	5009	A1	6003	B2
1220	A2	2022	A1	2039	A1	2048	A1	3013	A1	3026	B1	4001	B2	5010	A1	7003	A2
1221	B2	2033	A1	2041	A1	2051	A1	3015	A2	3027	B1	4002	B2	5012	B1	7007	A1

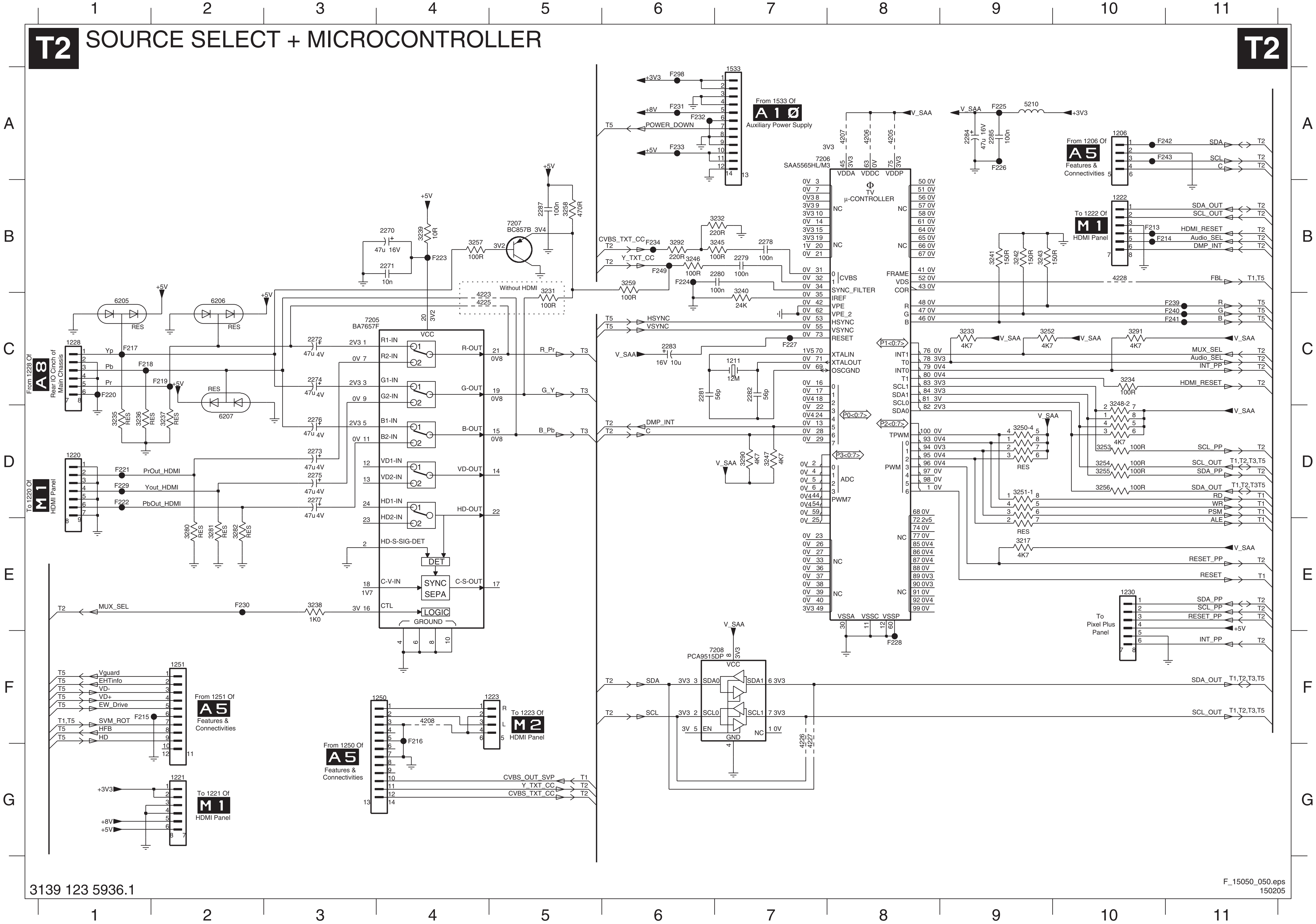


Trident Panel: SVP



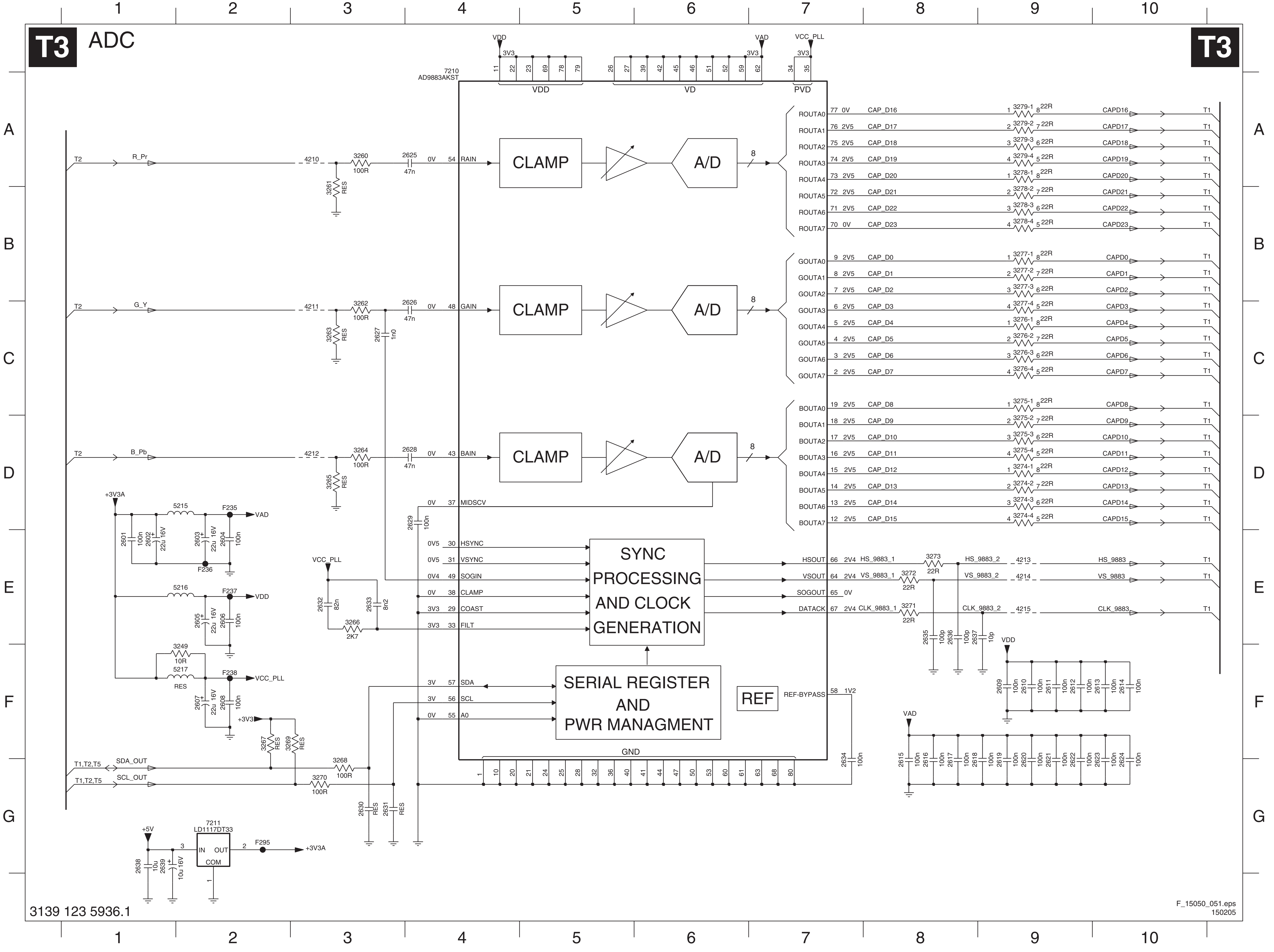
1210 D5
1224 E3
1231 A10
2201 F2
2202 F2
2203 G1
2204 G1
2205 G2
2206 G2
2207 G3
2208 G3
2209 G4
2210 G5
2211 E7
2212 E7
2213 E7
2214 F8
2215 F8
2216 F7
2217 D10
2218 D10
2219 D10
2220 D10
2221 D10
2222 D11
2223 D11
2224 D11
2225 D11
2226 D11
2227 F7
2228 F7
2229 F7
2230 F8
2231 F8
2232 G7
2233 G8
2234 G8
2235 G8
2236 G10
2237 G10
2238 B4
2239 B8
2240 B10
2241 B10
2242 C8
2243 C8
2244 D4
2245 D4
2246 D6
2247 D6
2248 D5
2249 E4
2250 E5
2251 E4
2252 E4
2253 E4
2254 F4
2255 F4
2256 F5
2257 F5
2258 F5
2259 E5
2260 E6
2261 E6
2262 E7
2263 D7
2265 E6
2266 E6
2267 F10
2268 F10
3201 B4
3202 B6
3203 B6
3204 B6
3205 B6
3206 B6
3207 B6
3208 C6
3209 D4
3210 D4
3211 E4
3212 E4
3213 E4
3214 E4
3215 F4
3216 F4
3218 E7
3219 E6
3221 C8
3222 B8
3223 B8
3224 B8
3225 B8
3226 A8
3227 C10
3228 B10
3229 B10
3230 B10
3283 C8
3284 D8
3295 D4
3298 F11
3299 F8
4200 A11
4201 A8
4202 A11
4203 C8
4204 D8
4209 C11
4250 G6
5201 F2
5202 G2
5203 G3
5204 G4
5205 F8
5206 G7
5207 F11
6200 G1
6201 F1
7201-1 D5
7201-2 A9
7201-3 A2
7201-4 D9
7201-5 A5
7202 B10
7203 C7
7204 D7
F201 G2
F202 G4
F203 D4
F204 E3
F205 E4
F206 F4
F207 C11
F208 A8
F209 F11
F211 G5
F212 F11
F287 B8
F288 B8
F289 B8
F290 B8

Trident Panel: Source Select & uP



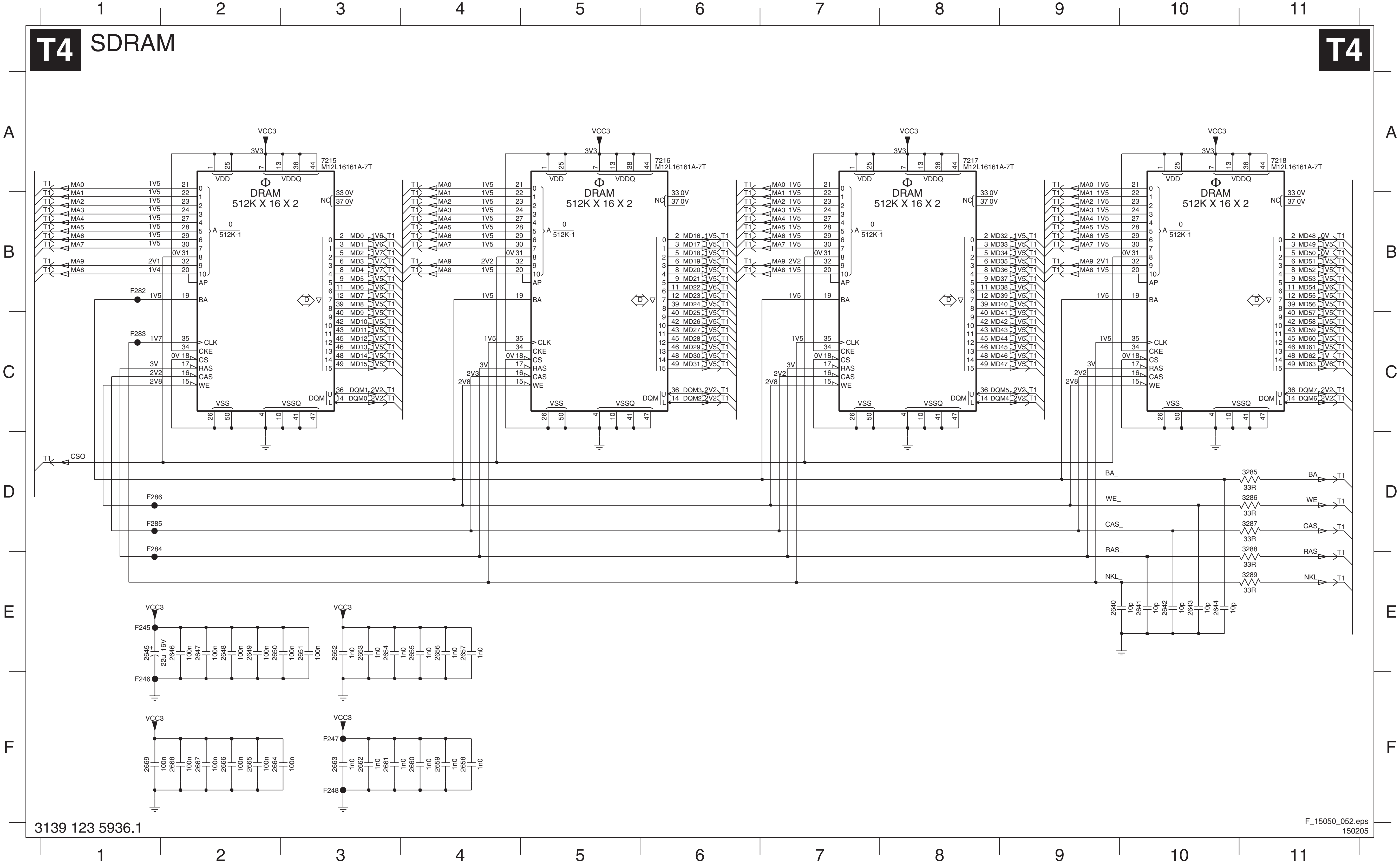
1206 A10	F227 C7
1211 C7	F228 F8
1220 D1	F229 D1
1221 G2	F230 E2
1222 B10	F231 A6
1223 F5	F232 A6
1228 C1	F233 A6
1230 E10	F234 B6
1250 F4	F239 C11
1251 F2	F240 C11
1533 A7	F241 C11
2270 B4	F242 A10
2271 B4	F243 A10
2272 C3	F249 B6
2273 D3	F298 A6
2274 C3	
2275 D3	
2276 D3	
2277 D3	
2278 B7	
2279 B7	
2280 B7	
2281 C6	
2282 C7	
2283 C6	
2284 A9	
2285 A9	
2287 B5	
3217 E9	
3231 C5	
3232 B7	
3233 C9	
3234 C10	
3235 D1	
3236 D1	
3237 D2	
3238 E3	
3239 B4	
3240 C7	
3241 B9	
3242 B9	
3243 B9	
3245 B7	
3246 B6	
3247 D7	
3248-2 D10	
3250-4 D9	
3251-1 D9	
3252 C9	
3253 D10	
3254 D10	
3255 D10	
3256 D10	
3257 B4	
3258 B5	
3259 B6	
3280 E2	
3281 E2	
3282 E2	
3290 D7	
3291 C10	
3292 B6	
4205 A8	
4206 A8	
4207 A8	
4208 F4	
4223 C4	
4225 C4	
4226 F7	
4227 F7	
4228 B10	
5210 A9	
6205 C1	
6206 C2	
6207 D2	
7205 C4	
7206 A8	
7207 B5	
7208 F7	
F213 B10	
F214 B10	
F215 F1	
F216 F4	
F217 C1	
F218 C1	
F219 C2	
F220 C1	
F221 D1	
F222 D1	
F223 B4	
F224 B6	
F225 A9	
F226 A9	

Trident Panel: ADC



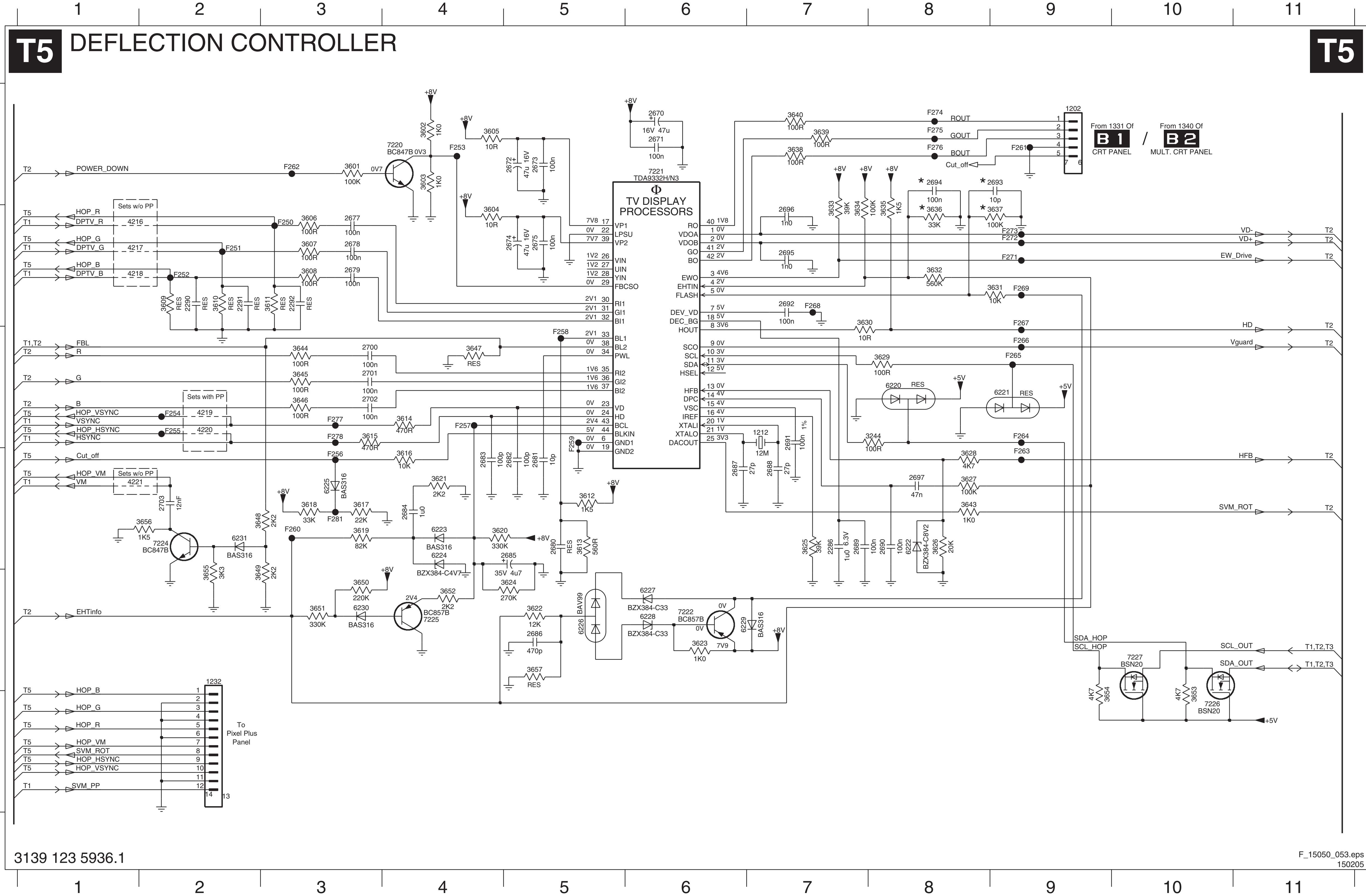
2601 E1
2602 E1
2603 E2
2604 E2
2605 E2
2606 E2
2607 F2
2608 F2
2609 F9
2610 F9
2611 F9
2612 F9
2613 F10
2614 F10
2615 G8
2616 G8
2617 G8
2618 G8
2619 G9
2620 G9
2621 G9
2622 G9
2623 G10
2624 G10
2625 A4
2626 C4
2627 C3
2628 D4
2629 D4
2630 G3
2631 G3
2632 E3
2633 E3
2634 G7
2635 E8
2636 E8
2637 E8
2638 G1
2639 G1
3249 F2
3260 A3
3261 B3
3262 C3
3263 C3
3264 D3
3265 D3
3266 E3
3267 F2
3268 G3
3269 F2
3270 G3
3271 E8
3272 E8
3273 E8
3274-1 D9
3274-2 D9
3274-3 D9
3274-4 D9
3275-1 C9
3275-2 D9
3275-3 D9
3275-4 D9
3276-1 C9
3276-2 C9
3276-3 C9
3276-4 C9
3277-1 B9
3277-2 B9
3277-3 B9
3277-4 C9
3278-1 A9
3278-2 B9
3278-3 B9
3278-4 B9
3279-1 A9
3279-2 A9
3279-3 A9
3279-4 A9
4210 A3
4211 C3
4212 D3
4213 E9
4214 E9
4215 E9
5215 D2
5216 E2
5217 F2
7210 A4
7211 G2
F235 D2
F236 E2
F237 E2
F238 F2
F295 G2

Trident Panel: SDRAM



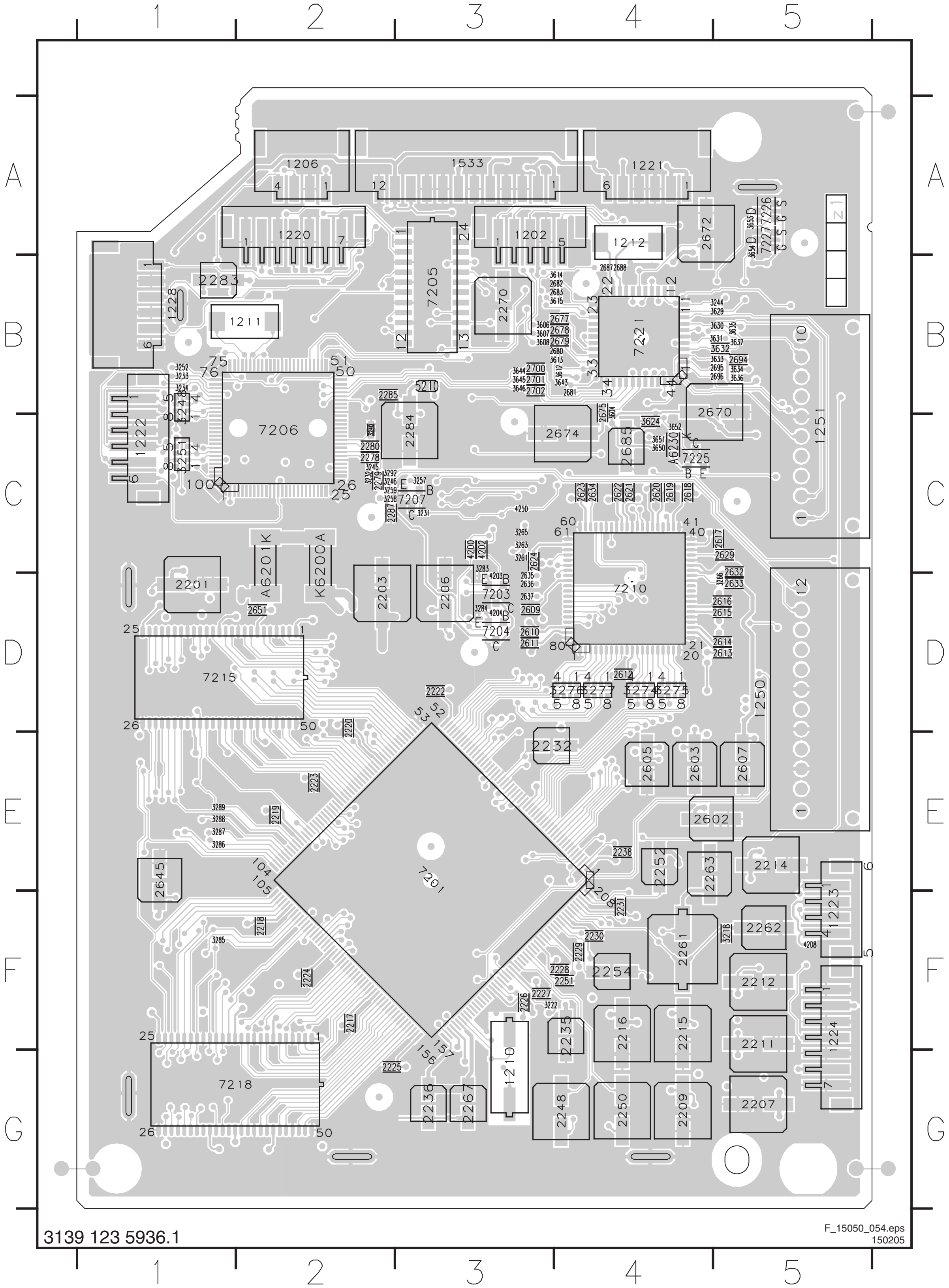
2640 E9
2641 E10
2642 E10
2643 E10
2644 E10
2645 E1
2646 E1
2647 E2
2648 E2
2649 E2
2650 E2
2651 E2
2652 E3
2653 E3
2654 E3
2655 E3
2656 E4
2657 E4
2658 F4
2659 F4
2660 F3
2661 F3
2662 F3
2663 F3
2664 F2
2665 F2
2666 F2
2667 F2
2668 F1
2669 F1
3285 D11
3286 D11
3287 D11
3288 D11
3289 E11
7215 A3
7216 A6
7217 A8
7218 A11
F245 E1
F246 F1
F247 F3
F248 F3
F282 B1
F283 C1
F284 D1
F285 D1
F286 D1

Trident Panel: Deflection Controller



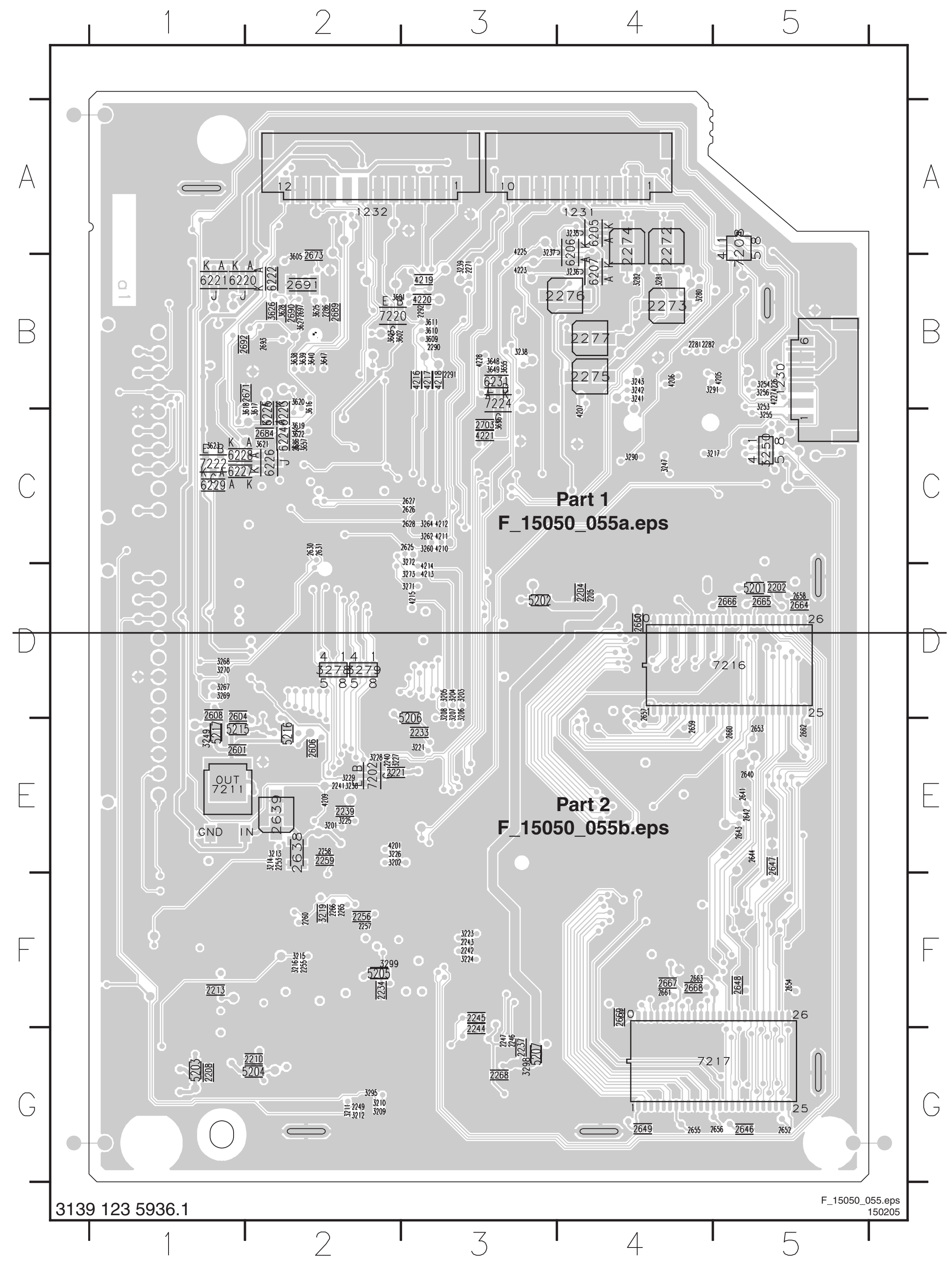
1202 A9
1212 C7
1232 E2
2286 D7
2290 B2
2291 B2
2292 B3
2670 A6
2671 A6
2672 A5
2673 A5
2674 B5
2675 B5
2677 B3
2678 B3
2679 B3
2680 D5
2681 D5
2682 D5
2683 D4
2684 D4
2685 D5
2686 E5
2687 D6
2688 D7
2689 D7
2690 D8
2691 C7
2692 B7
2693 A9
2694 A8
2695 B7
2696 B7
2697 D8
2700 C3
2701 C3
2702 C3
2703 D2
3244 C8
3601 A3
3602 A4
3603 A4
3604 B4
3605 A4
3606 B3
3607 B3
3608 B3
3609 B2
3610 B2
3611 B3
3612 D5
3613 D5
3614 C4
3615 C3
3616 D4
3617 D3
3618 D3
3619 D3
3620 D4
3621 D4
3622 E5
3623 E6
3624 E5
3625 D7
3626 D8
3627 D8
3628 D8
3629 C8
3630 B7
3631 B9
3632 B8
3633 B7
3634 B7
3635 B8
3636 B8
3637 B9
3638 A7
3639 A7
3640 A7
3643 D8
3644 C3
3645 C3
3646 C3
3647 C4
3648 D2
3649 E2
3650 E3
3651 E3
3652 E4
3653 F10
3654 F9
3655 E2
3656 D2
3657 E5
4216 B1
4217 B1
4218 B1
4219 C2
4220 C2
4221 D1
6220 C8
6221 C9
6222 D8
6223 D4
6224 D4
6225 D3
6226 E5
6227 E6
6228 E6
6229 E6
6230 E3
6231 D2
7220 A4
7221 A6
7222 E6
7224 D2
7225 E4
7226 F10
7227 E10
F250 B3
F251 B2
F252 B2
F253 A4
F254 C2
F255 C2
F256 D3
F257 C4
F258 C5
F259 C5
F260 D3
F261 A9
F262 A3
F263 D9
F264 C9
F265 C9
F266 C9
F267 B9
F268 B7
F269 B9
F271 B9
F272 B9
F273 B9
F274 A8
F275 A8
F276 A8
F277 C3
F278 C3
F281 D3

Layout Trident Panel (Top View)



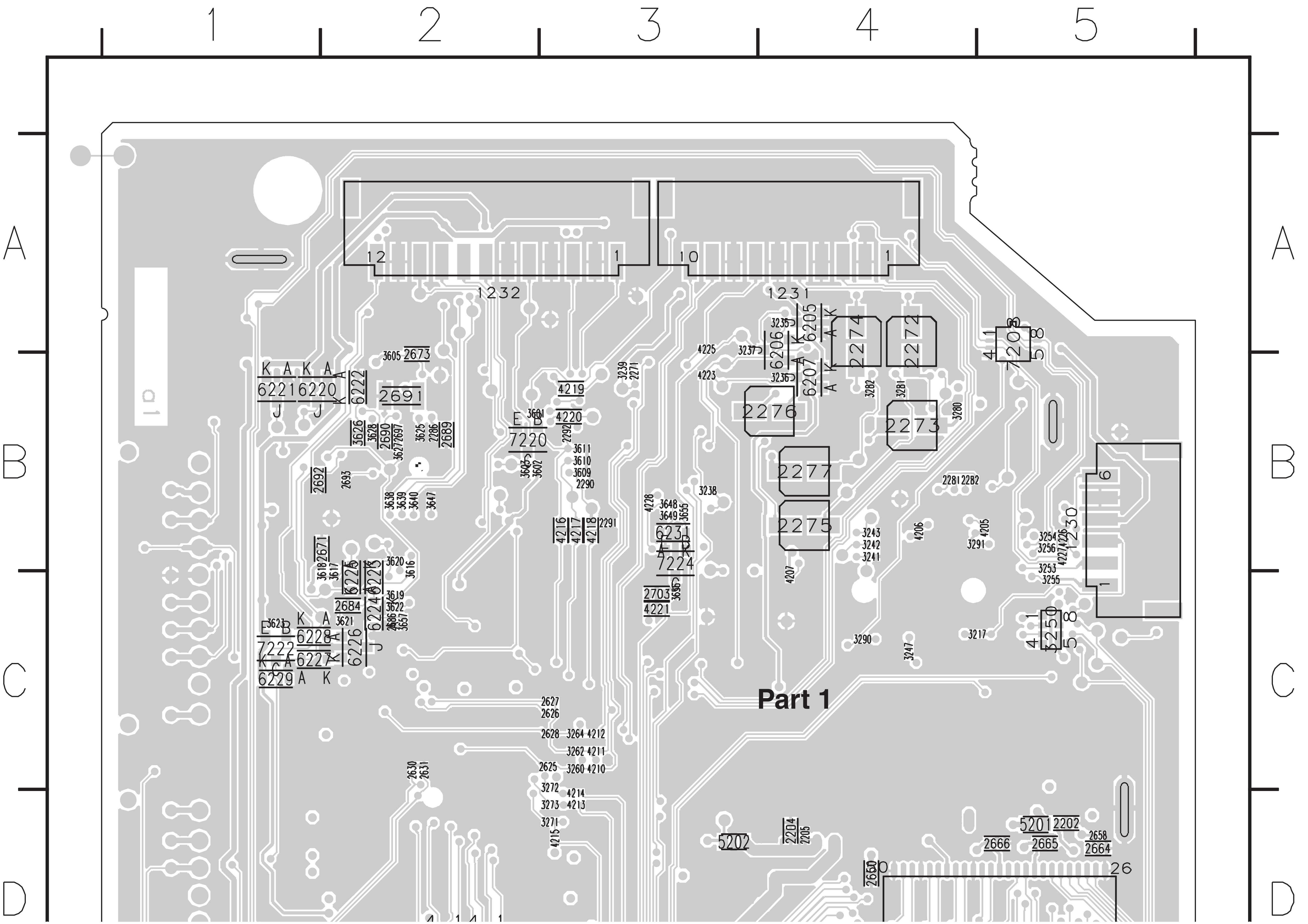
1202	A3	2688	B4
1206	A2	2694	B5
1210	G3	2695	B5
1211	B2	2696	B5
1212	A4	2700	B3
1220	A2	2701	B3
1221	A4	2702	B3
1222	C1	3218	F5
1223	F5	3222	F3
1224	F5	3231	C3
1228	B1	3232	C2
1250	D5	3233	B1
1251	C5	3234	B1
1533	A3	3240	C2
2201	D1	3244	B5
2203	D2	3245	C2
2206	D3	3246	C2
2207	G5	3248	B1
2209	G4	3251	C1
2211	F5	3252	B1
2212	F5	3257	C3
2214	E5	3258	C2
2215	F4	3259	C2
2216	F4	3261	C3
2217	F2	3263	C3
2218	F2	3265	C3
2219	E2	3266	D5
2220	D2	3274	D4
2222	D3	3275	D4
2223	E2	3276	D4
2224	F2	3277	D4
2225	G2	3283	D3
2226	F3	3284	D3
2227	F3	3285	F1
2228	F4	3286	E1
2229	F4	3287	E1
2230	F4	3288	E1
2231	F4	3289	E1
2232	E3	3292	C2
2235	F4	3604	B4
2236	G3	3606	B3
2238	E4	3607	B3
2248	G4	3608	B3
2250	G4	3612	B4
2251	F4	3613	B4
2252	E4	3614	B4
2254	F4	3615	B4
2261	F4	3624	C4
2262	F5	3629	B5
2263	E4	3630	B5
2267	G3	3631	B5
2270	B3	3632	B5
2278	C2	3633	B5
2279	C2	3634	B5
2280	C2	3635	B5
2283	B1	3636	B5
2284	C3	3637	B5
2285	B2	3643	B4
2287	C2	3644	B3
2602	E4	3645	B3
2603	E4	3646	B3
2605	E4	3650	C4
2607	E5	3651	C4
2609	D3	3652	C4
2610	D3	3653	A5
2611	D3	3654	A5
2612	D4	4200	C3
2613	D5	4202	C3
2614	D5	4203	D3
2615	D5	4204	D3
2616	D5	4208	F5
2617	C5	4250	C3
2618	C4	5210	B3
2619	C4	6200	C2
2620	C4	6201	C2
2621	C4	6230	C4
2622	C4	7201	E3
2623	C4	7203	D3
2624	C3	7204	D3
2629	C5	7205	B3
2632	C5	7206	C2
2633	D5	7207	C3
2634	C4	7210	D4
2635	D3	7215	D1
2636	D3	7218	G1
2637	D3	7221	B4
2645	E1	7225	C4
2651	D2	7226	A5
2670	B5	7227	A5
2672	A4		
2674	C4		
2675	B4		
2677	B4		
2678	B4		
2679	B4		
2680	B4		
2681	B4		
2682	B4		
2683	B4		
2685	C4		
2687	B4		

Layout Trident Panel (Overview Bottom View)



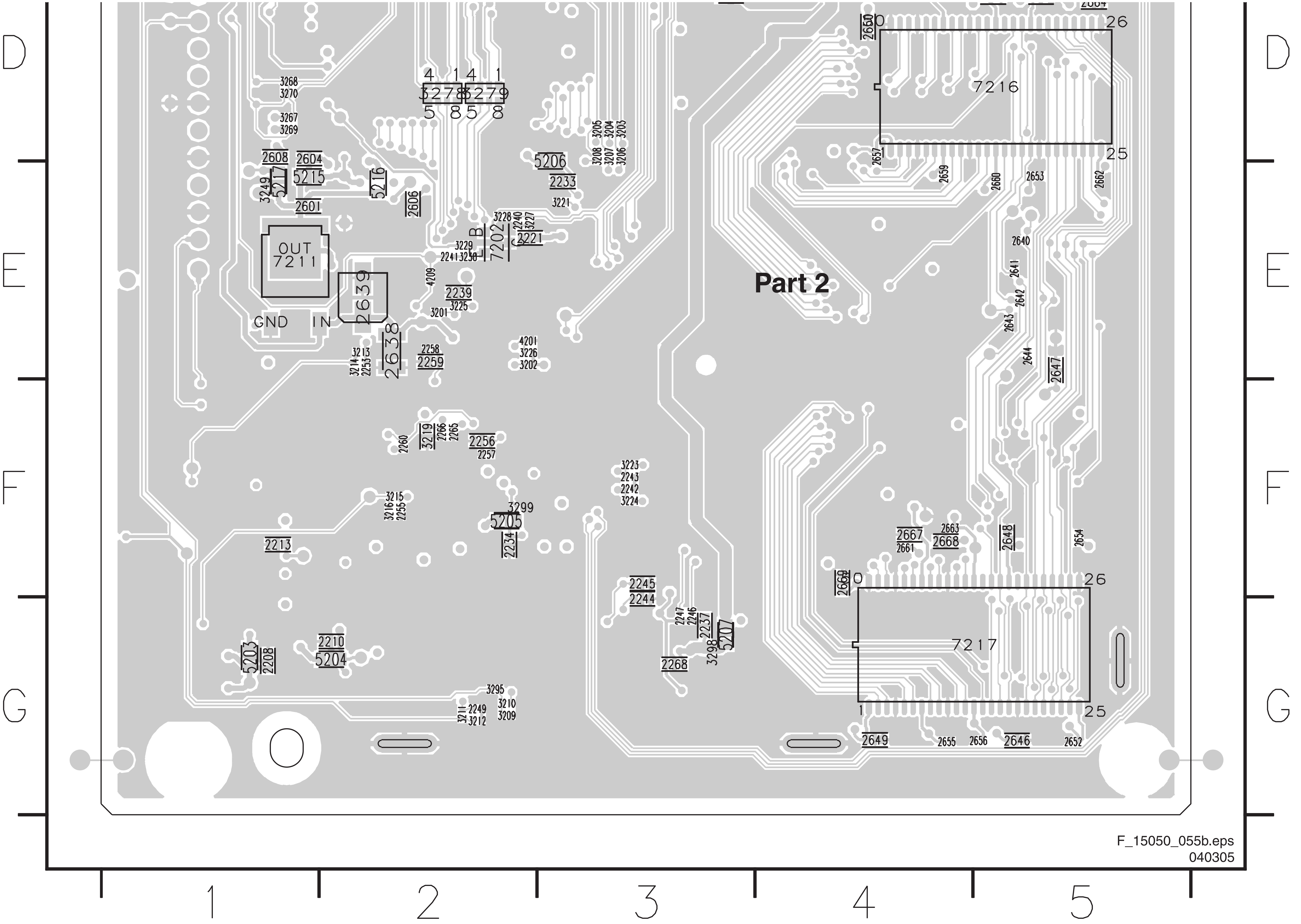
1230	B5	3206	D3	4223	B3
1231	A4	3207	D3	4225	A3
1232	A2	3208	D3	4226	B5
2202	D5	3209	G2	4227	B5
2204	D4	3210	G2	4228	B3
2205	D4	3211	G2	5201	D5
2208	G1	3212	G2	5202	D3
2210	G2	3213	E2	5203	G1
2213	F1	3214	E2	5204	G2
2221	E2	3215	F2	5205	F2
2233	E3	3216	F2	5206	D3
2234	F2	3217	C5	5207	G3
2237	G3	3219	F2	5215	E1
2239	E2	3221	E3	5216	E2
2240	E2	3223	F3	5217	E1
2241	E2	3224	F3	6205	A4
2242	F3	3225	E2	6206	A4
2243	F3	3226	E2	6207	B4
2244	G3	3227	E2	6220	B1
2245	F3	3228	E2	6221	B1
2246	G3	3229	E2	6222	B2
2247	G3	3230	E2	6223	C2
2249	G2	3235	A4	6224	C2
2253	E2	3236	B4	6225	C2
2255	F2	3237	A3	6226	C2
2256	F2	3238	B3	6227	C1
2257	F2	3239	B3	6228	C1
2258	E2	3241	B4	6229	C1
2259	E2	3242	B4	6231	B3
2260	F2	3243	B4	7202	E2
2265	F2	3247	C4	7208	A5
2266	F2	3249	E1	7211	E1
2268	G3	3250	C5	7216	D5
2271	B3	3253	B5	7217	G5
2272	A4	3254	B5	7220	B2
2273	B4	3255	C5	7222	C1
2274	A4	3256	B5	7224	B3
2275	B4	3260	C3		
2276	B4	3262	C3		
2277	B4	3264	C3		
2281	B4	3267	D1		
2282	B4	3268	D1		
2286	B2	3269	D1		
2290	B3	3270	D1		
2291	B3	3271	D3		
2292	B3	3272	C3		
2601	E1	3273	D3		
2604	D1	3278	D2		
2606	E2	3279	D2		
2608	D1	3280	B4		
2625	C3	3281	B4		
2626	C3	3282	B4		
2627	C3	3290	C4		
2628	C3	3291	B4		
2630	C2	3295	G2		
2631	C2	3298	G3		
2638	E2	3299	F2		
2639	E2	3601	B2		
2640	E5	3602	B2		
2641	E5	3603	B2		
2642	E5	3605	B2		
2643	E5	3609	B3		
2644	E5	3610	B3		
2646	G5	3611	B3		
2647	E5	3616	B2		
2648	F5	3617	C2		
2649	G4	3618	C2		
2650	D4	3619	C2		
2652	G5	3620	B2		
2653	E5	3621	C2		
2654	F5	3622	C2		
2655	G4	3623	C1		
2656	G5	3625	B2		
2657	D4	3626	B2		
2658	D5	3627	B2		
2659	E4	3628	B2		
2660	E5	3638	B2		
2661	F4	3639	B2		
2662	E5	3640	B2		
2663	F4	3647	B2		
2664	D5	3648	B3		
2665	D5	3649	B3		
2666	D5	3655	B3		
2667	F4	3656	C3		
2668	F4	3657	C2		
2669	F4	4201	E2		
2671	B2	4205	B5		
2673	B2	4206	B4		
2684	C2	4207	C4		
2686	C2	4209	E2		
2689	B2	4210	C3		
2690	B2	4211	C3		
2691	B2	4212	C3		
2692	B1	4213	D3		
2693	B2	4214	D3		
2697	B2	4215	D3		
2703	C3	4216	B3		
3201	E2	4217	B3		
3202	E2	4218	B3		
3203	D3	4219	B3		
3204	D3	4220	B3		
3205	D3	4221	C3		

Layout Trident Panel (Part 1 Bottom View)



F_15050_055a.eps
180205

Layout Trident Panel (Part 2 Bottom View)



F_15050_055b.eps
040305

8. Alignments

Index of this chapter:

8.1 General Alignment Conditions
8.2 Hardware Alignments
8.3 Software Alignments and Settings

Note:

- The Service Default Mode (SDM) and Service Alignment Mode (SAM) are described in chapter 5 “Service Modes, ...”.
- Menu navigation is done with the CURSOR UP, DOWN, LEFT, or RIGHT keys of the remote control transmitter.

8.1 General Alignment Conditions

Perform all electrical adjustments under the following conditions:

- AC voltage and frequency (region dependent):
  - 120 V_ac / 60 Hz, or
  - 240 V_ac / 50 Hz.
- Connect the set to the AC power (a.k.a. Mains voltage) via an isolation transformer with a low internal resistance.
- Allow the set to warm up for approximately 20 minutes.
- Measure the voltages and waveforms in relation to chassis ground (with the exception of the voltages on the primary side of the power supply). Never use the cooling fins / plates as ground.
- Test probe: Ri > 10 Mohm; Ci < 2.5 pF.
- Use an isolated trimmer / screwdriver to perform the alignments.

8.2 Hardware Alignments

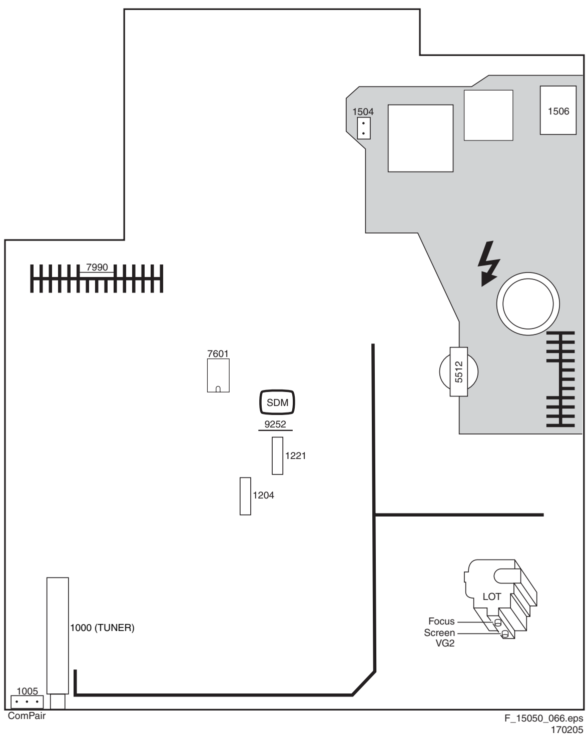


Figure 8-1 Top view family board

8.2.1 Vg2 Adjustment

1. Activate the SAM.
2. Go to the WHITE TONE sub menu.
3. Set the values of NORMAL RED, GREEN and BLUE to “32”.
4. Go, via the MENU key, to the normal user menu and set
5. SATURATION/COLOR to “0”.
6. CONTRAST to “0”.
7. BRIGHTNESS to minimum (OSD just visible).
8. Return to the SAM via the MENU key.
9. Connect the RF output of a pattern generator to the antenna input. Test pattern is a 'black' picture (blank screen on CRT without any OSD info) with a signal strength of 1 V_pp.
10. Set the channel of the oscilloscope to 50 V/div and the time base to 0.2 ms (external triggering on the vertical pulse). Ground the scope at the CRT panel and connect a 10:1 probe to one of the cathodes of the picture tube socket.
11. Measure the cut off pulse during first full line after the frame blanking (see figure “V_cutoff waveform”). You will see two pulses, one being the “cut off” pulse and the other being the “white drive” pulse. Choose the one with the lowest value; this is the “cut off” pulse.
12. Select the cathode with the highest V_dc value for the alignment. Adjust the V_cutoff of this gun with the SCREEN potentiometer (see figure “Top view family board”) on the LOT to 160 V_dc, except for the 25/28BLD picture tube (Black Line Display, for EU only); this tube must be aligned to 140 V_dc.
13. Restore BRIGHTNESS and CONTRAST to normal (= 31).

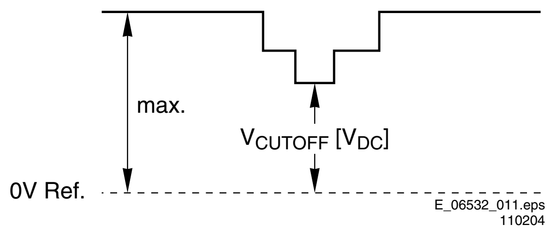


Figure 8-2 V_cutoff waveform

8.2.2 Focusing

1. Tune the set to a circle or crosshatch test pattern (use an external video pattern generator).
2. Choose picture mode NATURAL with the SMART PICTURE button on the remote control transmitter.
3. Adjust the FOCUS potentiometer (see figure “Top view family board”) until the vertical lines at 2/3 from east and west, at the height of the centerline, are of minimum width without visible haze.

8.3 Software Alignments and Settings

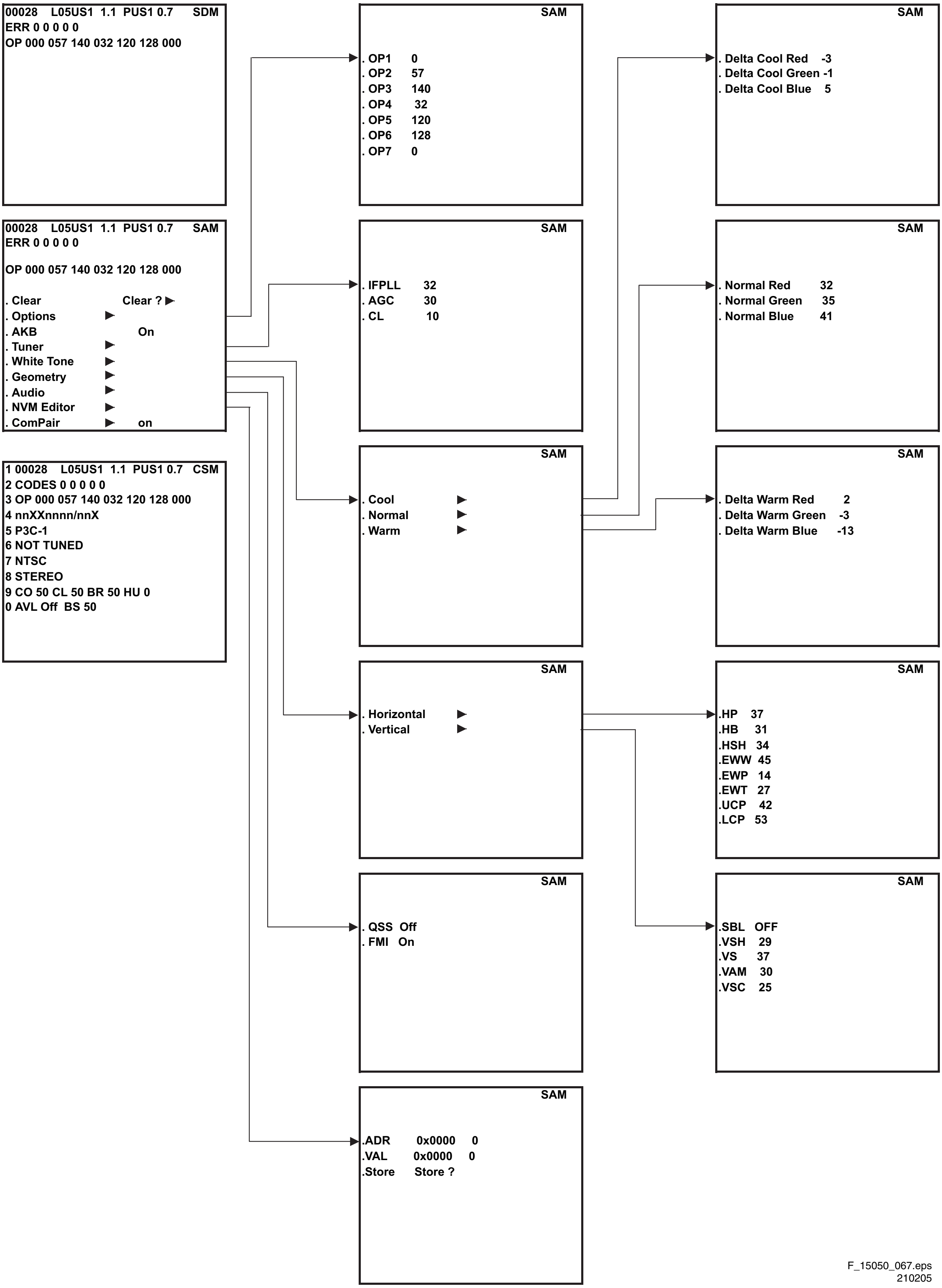


Figure 8-3 Service Mode overview

Enter the Service Alignment Mode (see also chapter 5 “Service Modes, ...”). The SAM menu will now appear on the screen. Select one of the following alignments:

- Options
- Tuner
- White Tone
- Geometry
- Audio

8.3.1 Options

Options are used to control the presence/absence of certain features and hardware.

How to change an Option Byte

An Option Byte represents a number of different options. Changing these bytes directly, makes it possible to set all options very fast. All options are controlled via seven option bytes. Select the option byte (OP1.. OP7) with the MENU UP/ DOWN keys, and enter the new value.

Leaving the OPTION submenu saves the changes in the Option Byte settings. Some changes will only take effect after the set has been switched “off” and “on” with the AC power switch (cold start).

How to calculate the value of an Option Byte

- Calculate an Option Byte value (OP1 .. OP7) in the following way:
- Check the status of the single option bits (OB): are they enabled (1) or disabled (0).
- When an option bit is enabled (1) it represents a certain value (see column “Bit value” in table below). When an option bit is disabled, its value is 0.
- The total value of an Option Byte (decimal) is formed by the sum of its eight option bits. The factory values are printed on a sticker on the CRT (depends on region).

Table 8-1 Option Byte calculation

Bit (value)	OP1	OP2	OP3	OP4	OP5	OP6	OP7
0 (1)	OB10	OB20	OB30	OB40	OB50	OB60	OB70
1 (2)	OB11	OB21	OB31	OB41	OB51	OB61	OB71
2 (4)	OB12	OB22	OB32	OB42	OB52	OB62	OB72
3 (8)	OB13	OB23	OB33	OB43	OB53	OB63	OB73
4 (16)	OB14	OB24	OB34	OB44	OB54	OB64	OB74
5 (32)	OB15	OB25	OB35	OB45	OB55	OB65	OB75
6 (64)	OB16	OB26	OB36	OB46	OB56	OB66	OB76
7 (128)	OB17	OB27	OB37	OB47	OB57	OB67	OB77
Total:	Sum	Sum	Sum	Sum	Sum	Sum	Sum

Option Bit Assignment

Following are the option bit assignments for all software clusters.

Table 8-2 Option code overview per model (OP1 - OP4)

Option Bit	Option Name	27MT5405/17	27PT8420/37	30PW8420/37	29PT8422/85	32PW8422/85
OP1						
7	Philips Tuner	0	0	0	0	0
6	FM Radio	0	0	0	0	0
5	LNA	0	0	0	0	0
4	ATS (EU)	0	1	1	1	1
3	ACI	1	1	1	1	1
2	UK PNP	0	0	0	0	0
1	Virgin Mode	0	0	0	0	0
0	China	0	0	0	0	0
	OP1 value (dec)	8	24	24	24	24
	OP1 value (hex)	08	18	18	18	18
OP2						
7	SC	0	0	0	0	0
6	Green_UI	1	0	0	0	0
5	Channel Naming	0	0	0	0	0
4	LTI	0	0	0	0	0
3	Tilt	0	0	1	0	1
2	Fine_Tuning	1	1	1	1	1
1	PIP Philips Tuner	0	0	0	0	0
0	Hue	1	1	1	1	1
	OP2 value (dec)	69	5	13	5	13
	OP2 value (hex)	45	05	0D	05	0D
OP3						
7	EW Function	1	1	1	1	1
6	2 Tuner PIP	0	0	0	0	0
5	PIP_Splitter	0	0	0	0	0
4	Splitter	0	0	0	0	0
3	Virtual Dolby	1	1	1	1	1
2	Wide Screen	0	0	1	0	1
1	WSSB (EU)	0	0	0	0	0
0	Eco_Subwoofer	0	0	0	0	0
	OP3 value (dec)	136	136	140	136	140
	OP3 value (hex)	88	88	8C	88	8C
OP4						
7	OP-COMPRESS-16-10	1	1	0	1	0
6	OP-OPTIMIZED-START	0	0	0	0	0
5	Ultra Bass	1	1	1	1	1
4	Delta Volume	0	0	0	0	0
3	Reserved	0	0	0	0	0
2	Volume Limiter	0	0	0	0	0
1	Reserved	0	0	0	0	0
0	Stero_Nicam_2CS	0	0	0	0	0
	OP4 value (dec)	160	160	32	160	32
	OP4 value (hex)	A0	A0	20	A0	20

Table 8-3 Option code overview per model (OP5 - OP7)

Option Bit	Option Name	27MT5405/17	27PT8420/37	30PW8420/37	29PT8422/85	32PW8422/85
OP5						
7	AV1	1	1	1	1	1
6	AV2	1	1	1	1	1
5	AV3	1	1	1	1	1
4	CVI	1	1	1	1	1
3	SVHS2	1	1	1	1	1
2	SVHS3	0	0	0	0	0
1	Hotel Mode	0	0	0	0	0
0	Reserved	0	0	0	0	0
	OP5 value (dec)	248	248	248	248	248
	OP5 value (hex)	F8	F8	F8	F8	F8
OP6						
7	Personal Zapping	0	1	1	1	1
6	OP_SMART_SURF	1	0	0	0	0
5	FM Trap	0	0	0	0	0
4	Comb filter	0	0	0	0	0
3	Active control	0	1	1	1	1
2	Video Text	0	0	0	0	0
1	Light sensor	0	1	1	1	1
0	Dual Text	0	0	0	0	0
	OP6 value (dec)	64	138	138	138	138
	OP6 value (hex)	40	8A	8A	8A	8A
OP7						
7	Time Win1	0	0	0	0	0
6	OP_MALAY	0	0	0	0	0
5	OP_THAI	0	0	0	0	0
4	OP_SIGNAL_STRENGTH	0	0	0	0	0
3	Reserved	0	0	0	0	0
2	Reserved	0	0	0	0	0
1	Reserved	0	0	0	0	0
0	Reserved	0	0	0	0	0
	OP7 value (dec)	0	0	0	0	0

Option bit definition

Option Byte 1 (OP1)

- **OB17**: PHILIPS TUNER
  - 0 : ALPS / MASCO compatible tuner is in use.
  - 1 : Philips compatible tuner is in use.
- **OB16**: FM RADIO
  - 0 : FM radio feature is disabled or not applicable.
  - 1 : FM radio feature is enabled.
- **OB15**: LNA
  - 0 : Auto Picture Booster is not available or not applicable.
  - 1 : Auto Picture Booster is available.
- **OB14**: ATS
  - 0 : Automatic Tuning System (ATS) feature is disabled or not applicable.
  - 1 : ATS feature is enabled. When ATS is enabled, it sorts the program in an ascending order starting from program “1”.
- **OB13**: ACI
  - 0 : Automatic Channel Installation (ACI) feature is disabled or not applicable.
  - 1 : ACI feature is enabled.
- **OB12**: UK PNP
  - 0 : UK's default Plug and Play setting is not available or not applicable.
  - 1 : UK's default Plug and Play setting is available.
  - When UK PNP and VIRGIN MODE are set to “1” at the initial setup and after exiting from menu, VIRGIN MODE will be set automatically to “0” while UK PNP remains “1”.
- **OB11**: VIRGIN MODE
  - 0 : Virgin mode is disabled or not applicable.
  - 1 : Virgin mode is enabled. Plug and Play menu item will be displayed to perform installation at the initial startup of the TV when VIRGIN MODE is set to “1”. After installation is finished, this option bit will be automatically set to “0”.
- **OB10**: CHINA
  - 0 : Tuning is not for China set, or this option bit is not applicable.
  - 1 : Tuning is for China set.

Option Byte 2 (OP2)

- **OB27**: Soft Clipping.
  - Not applicable. Default setting is “0”.
- **OB26**: GREEN UI
  - 0 : Green UI is disabled (for Philips brand).
  - 1 : Green UI is enabled (for Magnavox brand).
  - Note: only for NAFTA region.
- **OB25**: CHANNEL NAMING
  - 0 : Name FM Channel is disabled or not applicable.
  - 1 : Name FM Channel is enabled.
  - Note : Name FM channel can be enabled only when FM RADIO= “1”.
- **OB24**: LTI
  - 0 : Luminance Transient Improvement (LTI) is disabled or not applicable.
  - 1 : LTI is enabled.
- **OB23**: TILT
  - 0 : Rotate Picture is disabled or not applicable.
  - 1 : Rotate Picture is enabled.
- **OB22**: FINE TUNING
  - 0 : Fine Tuning for Channel Offset is disabled or not applicable.
  - 1 : Fine Tuning for Channel Offset is enabled.
- **OB21**: PIP PHILIPS TUNER
  - 0 : ALPS / MASCO compatible tuner is in use for PIP module.
  - 1 : Philips compatible tuner is in use for PIP module.
- **OB20**: HUE
  - 0 : Hue/Tint Level is disabled or not applicable.
  - 1 : Hue/Tint Level is enabled.

Option Byte 3 (OP3)

- **OB37**: EW FUNCTION
  - 0 : EW function is disabled. In this case, only Expand 4:3 is allowed, Compress 16:9 is not applicable.
  - 1 : EW function is enabled. In this case, both Expand 4:3 and Compress 16:9 are applicable.
- **OB36**: 2 TUNER PIP
  - 0 : Software selection no PIP
  - 1 : Software selection with PIP
  - Note: Only for EU/AP region for sets with PIP.
- **OB35**: PIP SPLITTER
  - 0 : Normal Tuner in PIP
  - 1 : Splitter in PIP
  - Note: Only for EU/AP region. For PIP sets and build in with Splitter in PIP tuner.
- **OB34**: SPLITTER
  - 0 : Normal Tuner for main chassis
  - 1 : Splitter Tuner for main chassis
  - Note: Only for EU/AP region.
- **OB33**: VIRTUAL DOLBY
  - 0 : Virtual Dolby is not applicable.
  - 1 : Virtual Dolby is applicable.
- **OB32**: WIDE SCREEN
  - 0 : Software is used for 4:3 sets or not applicable.
  - 1 : Software is used for 16:9 sets.
- **OB31**: WSSB (EU)
  - 0 : WSSB is disabled or not applicable.
  - 1 : WSSB is enabled.
  - Note : This option bit can be set to “1” only when WIDE SCREEN= “1”.
- **OB30**: ECO SUBWOOFER
  - 0 : Feature is disabled or not applicable.
  - 1 : Feature is enabled.

Option Byte 4 (OP4)

- **OB47**: OP_COMPRESS_16_10
  - 0 : Compress mode is not used.
  - 1 : Compress mode is used.
- **OB46**: OP_OPTIMISED_START
  - Not applicable. Default setting is “0”.
- **OB45**: ULTRA BASS
  - 0 : Ultra Bass is disabled or not applicable.
  - 1 : Ultra Bass is enabled.
  - Default setting is “0”.
- **OB44**: DELTA VOLUME
  - 0 : Delta Volume Level is disabled or not applicable.
  - 1 : Delta Volume Level is enabled.
- **OB43**: Reserved
  - Default setting is “0”.
- **OB42**: VOLUME LIMITER
  - 0 : Volume Limiter Level is disabled or not applicable.
  - 1 : Toggle Volume Limiter Level is enabled.
- **OB41**: Reserved
  - Default setting is “0”.
- **OB40**: STEREO NICAM 2CS
  - 0 : For AV Stereo.
  - 1 : For NICAM Stereo 2CS.

Option Byte 5 (OP5)

- **OB57**: AV1
  - 0 : AV1 source is not present.
  - 1 : AV1 source is present.
- **OB56**: AV2
  - 0 : AV2 source is not present.
  - 1 : AV2 source is present.
  - Note : For EU, when AV2=“1”, both EXT2 and SVHS2 should be included in the OSD loop.
- **OB55**: AV3
  - 0 : Side/Front AV3 source is not present.
  - 1 : Side/Front AV3 source is present.
- **OB54**: CVI
  - 0 : CVI source is not available.
  - 1 : CVI source is available.
- **OB53**: SVHS2
  - 0 : SVHS2 source is not available.
  - 1 : SVHS2 source is available.
  - Note : This option bit is not applicable for EU.
- **OB52**: SVHS3
  - 0 : SVHS3 source is not available.
  - 1 : SVHS3 source is available.
  - Note : This option bit is not applicable for EU.
- **OB51**: HOTEL MODE
  - 0 : Hotel mode is disabled or not applicable.
  - 1 : Hotel mode is enabled.
- **OB50**: Reserved
  - Default setting is “0”.

Option Byte 6 (OP6)

- **OB67**: PERSONAL ZAPPING
  - 0 : Personal Zapping feature is disabled or not applicable.
  - 1 : Personal Zapping feature is enabled.
- **OB66**: OP_SMART_SURF
  - 0 : Smart Surf key is not used on remote control.
  - 1 : Smart Surf key is used on remote control.
- **OB65**: FM TRAP
  - 0 : FM Trap is not present.
  - 1 : FM Trap is present.
  - **Note:** Only for LATAM region.
- **OB64**: COMBFILTER
  - 0 : 3D-combfilter is not present.
  - 1 : 3D-combfilter is present.
- **OB63**: ACTIVE CONTROL
  - 0 : Active Control feature is disabled or not applicable.
  - 1 : Active Control feature is enabled.
- **OB62**: VIDEO TEXT
  - 0 : Video Text (DW with TXT) is disabled or not applicable.
  - 1 : Video Text (DW with TXT) is enabled.
  - Note: For EU only.
- **OB61**: LIGHT SENSOR
  - 0 : Light sensor feature is disabled or not applicable.
  - 1 : Light sensor feature is enabled.
- **OB60**: DUAL TEXT
  - 0 : Dual Text and Text Dual Screen are disabled or not applicable.
  - 1: Dual Text and Text Dual Screen are enabled.

Option Byte 7 (OP7)

- **OB77**: TIME WIN1
  - 00 : The time window is set to 1.2 s.
  - 01 : The time window is set to 2 s.
  - Note :The time-out for all digit entries depends on this setting.
- **OB76**: OP_MALAY
  - For AP only. Default setting is “0”.
- **OB75**: OP_THAI
  - For AP only. Default setting is “0”.
- **OB74**: OP_SIGNAL_STRENGTH
  - For AP only. Default setting is “0”.
- **OB73**: Reserved
  - Default setting is “0”.
- **OB72**: Reserved
  - Default setting is “0”.
- **OB71**: Reserved
  - Default setting is “0”.
- **OB70**: Reserved
  - Default setting is “0”.

8.3.2 Tuner

Note: Described alignments are only necessary when the NVM (item 7601) is replaced.

IF PLL

This adjustment is auto-aligned. Therefore, no action is required.

AGC (AGC take over point)

1. Set the external pattern generator to a color bar video signal and connect the RF output to aerial input. Set amplitude to 10 mV and set frequency to 61.25 MHz (channel 3).
2. Connect a DC multimeter to pin 1 of the tuner (item 1000 on the main panel).
3. Activate the SAM.
4. Go to the TUNER sub menu.
5. Select AGC with the UP/DOWN cursor keys.
6. Adjust the AGC-value with the LEFT/ RIGHT cursor keys until the voltage at pin 1 of the tuner lies between 3.8 and 2.3 V (default value is “20”).
7. Switch the set to STANDBY, in order to store the alignments.

CL (Cathode drive level)

Always set to “5”.

8.3.3 White Tone

In the WHITE TONE sub menu, the values of the black cut off level can be adjusted. Normally, no alignment is needed, and you can use the given default values.
The color temperature mode (NORMAL, COOL and WARM) and the color (R, G, and B) can be selected with the UP/DOWN RIGHT/LEFT cursor keys. The value can be changed with the LEFT/RIGHT cursor keys. First, select the values for the NORMAL color temperature. Then select the values for the COOL and WARM mode. After alignment, switch the set to STANDBY, in order to store the alignments.

Default settings:

- NORMAL:
  - NORMAL R= “26”
  - NORMAL G= “32”
  - NORMAL B= “27”
- COOL:
  - DELTA COOL R= “-3”
  - DELTA COOL G= “0”
  - DELTA COOL B= “5”
- WARM:
  - DELTA WARM R= “2”
  - DELTA WARM G= “0”
  - DELTA WARM B= “-6”

8.3.4 Geometry

The geometry alignments menu contains several items to align the set, in order to obtain correct picture geometry.

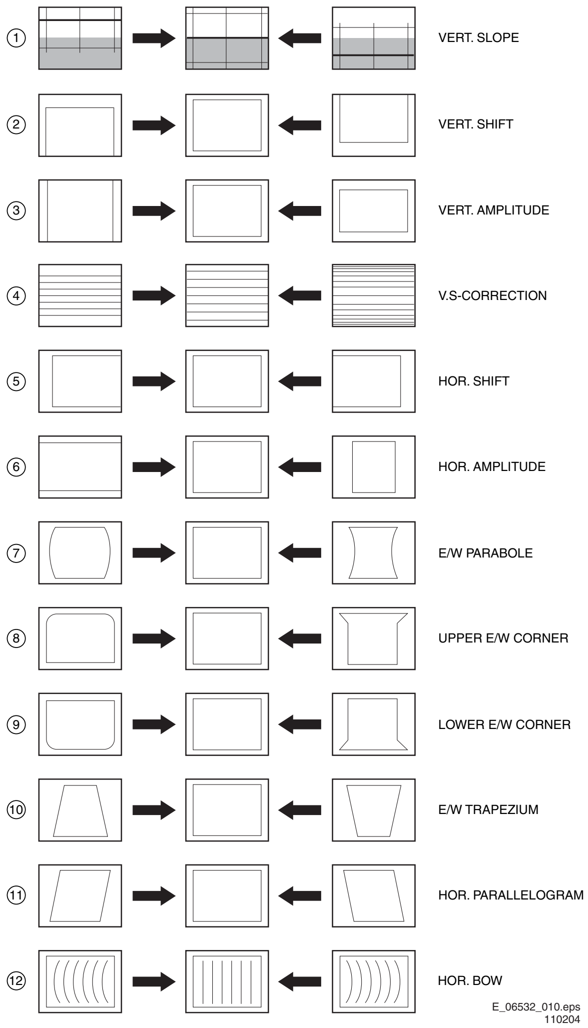


Figure 8-4 Geometry alignments

1. Connect an **external** video pattern generator to the aerial input of the TV-set and input a crosshatch test pattern. Set the generator amplitude to at least 1 mV and set frequency to 61.25 MHz (channel 3).
2. Set 'Smart Picture' to NATURAL (or MOVIES).
3. Activate the SAM menu (see chapter 5 “Service Modes, ...”).
4. Go to the GEOMETRY sub menu.
5. Choose HORIZONTAL or VERTICAL alignment.

Now the following alignments can be performed:

Horizontal

- **Horizontal Parallelogram (HP).** Align straight vertical lines in the top and the bottom; vertical rotation around the center.
- **Horizontal Bow (HB).** Align straight horizontal lines in the top and the bottom; horizontal rotation around the center.
- **Horizontal Shift (HSH).** Align the horizontal center of the picture to the horizontal center of the CRT.
- **East West Width (EWW).** Align the picture width until the complete test pattern is visible.
- **East West Parabola (EWP).** Align straight vertical lines at the sides of the screen.
- **Upper Corner Parabola (UCP).** Align straight vertical lines in the upper corners of the screen.
- **Lower Corner Parabola (LCP).** Align straight vertical lines in the lower corners of the screen.
- **East West Trapezium (EWT).** Align straight vertical lines in the middle of the screen.
- **H60 (Delta HSH for 60Hz, if present).** Align straight horizontal lines if NTSC system is used (60 Hz) i.s.o. PAL (50 Hz). Default value is “9”.

Vertical

- **Service blanking (SBL).** Switch the blanking of the lower half of the screen “on” or “off” (to be used in combination with the vertical slope alignment).
- **Vertical Shift (VSH).** Align the vertical centering so that the test pattern is located vertically in the middle. Repeat the 'vertical amplitude' alignment if necessary.
- **Vertical slope (VS).** Align the vertical center of the picture to the vertical center of the CRT. This is the first of the vertical alignments to perform. For an easy alignment, set SBL to “on”.
- **Vertical Amplitude (VAM).** Align the vertical amplitude so that the complete test pattern is visible.
- **Vertical S-Correction (VSC).** Align the vertical linearity, meaning that vertical intervals of a grid pattern must be equal over the entire screen height.
- **Vertical Zoom (VX, if present).** The vertical zoom is added in for the purpose of development. It helps the designer to set proper values for the movie expand or movie(16x9) compress. Default value is “25”.
- **V60 (Delta VAM for 60Hz, if present).** Align straight vertical lines if NTSC system (60 Hz) is used i.s.o. PAL (50 Hz). Default value is “-2”.

8.3.5 Audio

No alignments are needed for the audio sub menu. Use the given default values.

QSS (Quasi Split Sound)

- For NICAM/2CS sound system (EU/AP, except for AP-NTSC): set to “On”.
- For AV-Stereo sound system (sets without NICAM): set to “On”.
- For all other sets (NAFTA/LATAM/AP-NTSC): set to “Off”.

FMI (Freq. Modulation Intercarrier)

- For NICAM/2CS sound system (EU/AP, except for APNTSC): set to “On”.
- For AV-Stereo sound system (sets without NICAM): set to “Off”.
- For dBx/non-dBx sound systems: set to “On”.

NICAM Alignment

- For sets with NICAM/2CS (EU/AP, except for AP-NTSC) sound system: set to “79”.
- For all other sets (NAFTA/LATAM/AP-NTSC): set to “63”.

9. Circuit Descriptions, List of Abbreviations, and IC Data Sheets

Index of this chapter:

9.1 Introduction
9.2 2fH synchronisation
9.3 Source Select
9.4 Video Processing
9.5 Audio Processing
9.6 Abbreviation list
9.7 IC Data Sheets

Notes:

- Only **new** circuits compared to the L04U chassis are described in this chapter. For the other circuit descriptions, see the manual of the L04U chassis.
- Figures can deviate slightly from the actual situation, due to different set executions.
- For a good understanding of the following circuit descriptions, please use the diagrams in sections “Block Diagrams, ...”, and/or “Electrical Diagrams”. Where necessary, you will find a separate drawing for clarification.

9.1 Introduction

The "L05" chassis is designed for the model year 2005 and is used for TV sets with large screen sizes (from 27 to 32 inch), in Super Flat and Real Flat executions (both in 4:3 and 16:9 variants). This chassis is High Definition ready with a NTSC tuning system.
There are three types of CRT, namely one with 100 degrees deflection angle, one with 110 degrees and a Wide Screen CRT.

In comparison to its predecessor (the L04), this chassis has the following (new) features:

- **High Definition (HD) signal processing:** The chassis has a special HD processing board.
- **HDMI input:** The chassis has a High-Definition Multimedia Interface (HDMI) input.

The standard architecture consists of a Main panel (called "family board"), a Picture Tube panel, a Side I/O panel, a HDMI panel, a HD panel and a Top Control panel. The Main panel consists primarily of conventional components with some surface mounted devices in the audio and video processing part.
The functions for the basic video and audio processing are performed by one IC (TDA1200x, item 7200), the so-called third generation Ultimate One Chip (UOC-III) or “Hercules”. This chip is mounted on the “solder” side of the main panel, and has the following tasks:

- Mono/stereo, audio switching and part of the video switching.
- FM sound demodulation.

The CVBS-signal produced by the Hercules is supplied to the HD panel. This panel converts the standard framerate (1fH) NTSC CVBS-signal coming from the tuner and from the AV1 and AV2 inputs into a HD-signal with double framerate (2fH). The HD panel also handles videosignals from the HDMI and the CVI input (I/O panel).
All signals entering the TV set, be it NTSC signals from the tuner or signals already in HD format from the HDMI I/O panel, are displayed on the CRT in 1080i format. The HD panel performs the following functions:

- Video processing (mainly by the Trident chip, IC7201).
- OSD processing.
- Closed caption / text processing
- A/D conversion (of analog signals coming directly from the HDMI I/O panel).

The tuning system features 181 channels with on-screen display. The main tuning system uses a tuner, a microcomputer, and a memory IC mounted on the main panel. The microcomputer communicates via the I^2C bus with the memory IC, the customer keyboard, the remote receiver, the tuner, the signal processor IC, the HD processing section, and the audio output IC. The memory IC retains the settings for favorite stations, customer-preferred settings, and service / factory data.
The on-screen graphics and closed caption decoding are done within IC 7206 located on the HD panel. They are added to the main signal in the display processor, IC 7221, also located on the HD panel.

The chassis uses a Switching Mode Power Supply (SMPS) for the main voltage source. The chassis has a 'hot' ground reference on the primary side and a cold ground reference on the secondary side of the power supply and the rest of the chassis. For more information on the power supply, see the L04 manual.

9.2 2fH synchronisation

The 2fH sync generation is done by the DPTV SVP (IC7201). This IC converts the H and V sync signals (Hs and Vs) coming from the UOC into 2fH sync signals (HSYNC and VSYNC) which are outputted to the TDA9332 (HOP).
The HOP again generates the necessary deflection signals like VD+ and VD- for the Frame deflection; HD for line deflection; EW_DRIVE.

9.3 Source Select

This chassis has the following inputs in addition to the tuner RF input:

- **AV1:** This is a composite video input.
- **CVI:** This is a Component Video Input, it can accept 480i, 480p, 720p or 1080i.
- **AV2:** This input can accept CVBS or S-Video.
- **Side:** This input can accept CVBS or S-Video.
- **HDMI:** This is a High-Definition Multimedia Interface, it can accept 480p, 720p or 1080i video and audio in a digital TMDS (Transition Minimized Differential Signal) format.

The audio/video source selection between the tuner, AV1, AV2 and Side is controlled via the Hercules. The selected signal is fed to the HD panel which selects between the output of the UOCIII, CVI, and the HDMI input.
The Audio/Video Source Select is one of the more complex functions due to its diversity and complex switching. The Audio/Video Source Select comprises the following components:

- The Hercules for Mono Audio and Video Source Selection.
- The HEF switch for Stereo Audio as well as Video Selection.

9.3.1 Options

The option settings for the Source Selection can be found in Option settings of the SAM mode. The Option settings for Option 5 are as follows:

- Option Byte 5
  - Bit 7: AV1
  - Bit 6: AV2
  - Bit 5: AV3
  - Bit 4: CVI
  - Bit 3: SVHS2
  - Bit 2: SVHS3
  - Bit 1: HOTEL MODE
  - Bit 0:

For more details on the option settings, please refer to chapter 8 “Alignments”.

9.3.2 Audio Source Selection

The signals coming out of the DEMDEC (internal demodulator/ decoder block of the Hercules) are selectable and consist of the following (depending on the transmission):
- DEC L/R (Can be NICAM, FM 2CS, or BTSC Stereo).
- Mono (Refers to fallback/forced Mono in Stereo Transmission).
- SAP.

For L05, the assigned I/O with respect to the Hercules is as follows:
- AV1 Input assigned to **Audio In 5**.
- AV2 Input assigned to **Audio In 3**.
- Side AV Input assigned to **Audio In 4**.
- External Interface Input assigned **to Audio In 2**.
- Constant Level Output assigned to **Loudspeaker Output**.

9.3.3 Video Source Selection

Video source selection is done inside the Hercules. Therefore it provides a video switch with 3 external CVBS inputs and a CVBS output. All CVBS inputs can be used as Y-input for Y/C signals. However, only 2 Y/C sources can be selected because the circuit has 2 chroma inputs.
The selected input signal is fed to the HD panel for further processing.

9.4 Video Processing

The Video Processing is divided into two sections, one for the processing of 1fH NTSC signals (by the Hercules), and a second for the processing of 2fH signals (on the HD panel, by the Trident chip).

The tuner is only one of the sources of video signal for the Hercules. The tuner is controlled by the Hercules. The Hercules also receives video signals from AV2 and the Side I/ O panel.
If an NTSC signal is selected by the user, the selected CVBS signal is output to two different lines. One CVBS line goes to the Trident chip, IC 7201, on the HD panel. CVBS_TXT signals are fed to IC 7206 on the HD panel, which is able to process Closed Caption text or Teletext. This IC also generates the OSD texts.

If the TV set receives a 2fH signal (via one of its HDMI panel inputs, i.e. the CVI/YPbPr or the HDMI input), the signal is fed to a selector switch on the HD panel, IC 7205. The selected signal (component video or RGB) is fed to an AD converter, IC 7210. The digital signal coming from the AD converter is fed to the Trident chip, IC 7201. This IC enhances the video quality of the picture and scales the picture to the 1080i format. The analog RGB signal coming from the Trident chip is fed to the display processor, IC 7221. Here, the picture control functions are performed, as well as the insertion of OSD. Then, the processed videosignal is fed to the CRT panel.

Some features:
- Full YUV-loop interface (alternative functions: DVD, RGB or Y/C).
- Internal OSD insertion (not Saturation or Contrast controlled).
- Double window implementation.
- Linear / non linear scaling for 16:9 sets.
- Tint (hue) on UV signals (including DVD).
- Peaking, Coring, Black \ Blue \ White-stretch.
- Transfer-Ratio and Scavem (also on TXT).

9.4.1 Block Diagram

Following diagram is the block diagram of the video processing part:

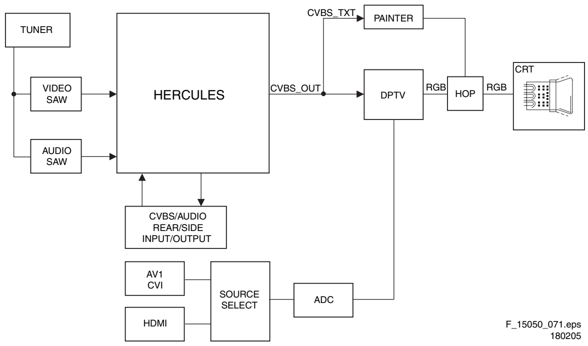


Figure 9-1 Video processing block diagram

9.5 Audio Processing

The audio decoding is done entirely via the Hercules, IC 7200. The IF output from the Tuner is fed directly to either the Video-IF or the Sound-IF input depending on the type of concept chosen. There are mainly two types of decoder in the Hercules, an analog decoder that decodes only Mono, regardless of any standards, and a digital decoder (or DEMDEC) that can decode both Mono as well as Stereo, again regardless of any standards.

Audio is included in the HDMI bit stream. Digital audio from IC7002 is fed to an audio DAC, IC 7011. The audio signal from the DAC is fed to IC 7050, a switch, of which only one input is used. The output of the switch is fed to the Hercules chip, IC 7200.
Audio for the CVI input should be inserted into AV1. Pins 68 and 69 of the Hercules provide the audio signal for the two-channel 20 W Audio Amplifier, IC 7990.

9.6 Abbreviation list

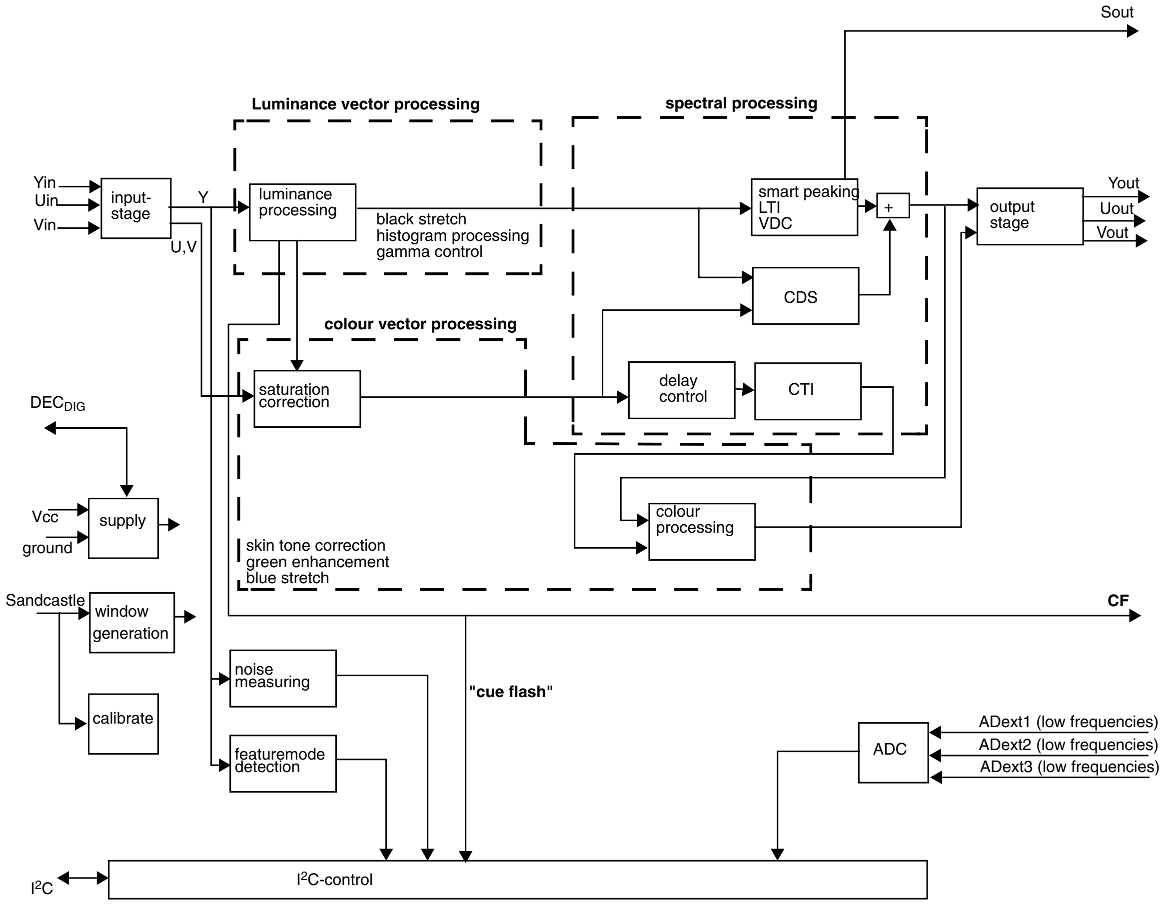
2CS	2 Carrier (or Channel) Stereo
ACI	Automatic Channel Installation: algorithm that installs TV sets directly from cable network by means of a predefined TXT page
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency
AFT	Automatic Fine Tuning
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box
AM	Amplitude Modulation
AP	Asia Pacific region
AR	Aspect Ratio: 4 by 3 or 16 by 9
ATS	Automatic Tuning System
AV	External Audio Video
AVL	Automatic Volume Leveler
BCL	Beam Current Limitation
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz
BTSC	Broadcast Television Standard Committee. Multiplex FM stereo sound system, originating from the USA and used e.g. in LATAM and AP-NTSC countries
CC	Closed Caption
CCC	Continuous Cathode Calibration
ComPair	Computer aided rePair
CRT	Cathode Ray Tube or picture tube
CSM	Customer Service Mode
CTI	Color Transient Improvement: manipulates steepness of chroma transients
CVBS	Composite Video Blanking and Synchronization
CVI	Component Video Input
DAC	Digital to Analogue Converter
DBX	Dynamic Bass Expander or noise reduction system in BTSC
D/K	Monochrome TV system. Sound carrier distance is 6.5 MHz
DFU	Direction For Use: description for the end user
DNR	Dynamic Noise Reduction
DSP	Digital Signal Processing
DST	Dealer Service Tool: special remote control designed for dealers to enter e.g. service mode
DVD	Digital Versatile Disc
EEPROM	Electrically Erasable and Programmable Read Only Memory
EHT	Extra High Tension
EHT-INFO	Extra High Tension information
EPG	Electronic Programming Guide
EU	Europe
EW	East West, related to horizontal deflection of the set
EXT	External (source), entering the set via SCART or Cinch
FBL	Fast Blanking: DC signal accompanying RGB signals
FILAMENT	Filament of CRT
FM	Field Memory or Frequency Modulation
H	Horizontal sync signal
HP	Headphone
I	Monochrome TV system. Sound carrier distance is 6.0 MHz
I2C	Integrated IC bus
IF	Intermediate Frequency
IIC	Integrated IC bus
ITV	Institutional TV
LATAM	Latin American countries like Brazil, Argentina, etc.
LED	Light Emitting Diode
L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
LS	Large Screen or Loudspeaker
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
NC	Not Connected
NICAM	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, mainly used in Europe.
NTSC	National Television Standard Committee. Color system mainly used in North America and Japan. Color carrier NTSC M/N = 3.579545 MHz, NTSC 4.43 = 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
NVM	Non Volatile Memory: IC containing TV related data e.g. alignments
OB	Option Bit
OC	Open Circuit
OP	Option Byte
OSD	On Screen Display
PAL	Phase Alternating Line. Color system mainly used in West Europe (color carrier = 4.433619 MHz) and South America (color carrier PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)
PCB	Printed Circuit board
PLL	Phase Locked Loop. Used for e.g. FST tuning systems. The customer can give directly the desired frequency
POR	Power-On Reset
PTP	Picture Tube Panel (or CRT-panel)
RAM	Random Access Memory
RC	Remote Control handset
RGB	Red, Green, and Blue video signals
ROM	Read Only Memory
SDAM	Service Default / Alignment Mode
SAP	Second Audio Program
SC	Sandcastle: pulse derived from sync signals
S/C	Short Circuit
SCL	Serial Clock
SDA	Serial Data
SECAM	SEequence Couleur Avec Memoire. Color system mainly used in France and East Europe. Color carriers = 4.406250 MHz and 4.250000 MHz
SIF	Sound Intermediate Frequency
SS	Small Screen
STBY	Standby
SVHS	Super Video Home System
SW	Software
THD	Total Harmonic Distortion
TXT	Teletext
uP	Microprocessor
UOC	Ultimate One Chip
UVSH	UHF, VHF, S-, and Hyper- band
V	Vertical sync signal
V_BAT	Main supply voltage for the deflection stage (mostly 141 V)
V-chip	Violence Chip
VCR	Video Cassette Recorder
WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
XTAL	Quartz crystal
YC	Luminance (Y) and Chrominance (C) signal

9.7 IC Data Sheets

This section shows the internal block diagrams and pin layouts of ICs that are drawn as "black boxes" in the electrical diagrams (with the exception of "memory" and "logic" ICs).

9.7.1 Diagram H, TDA9178 (IC7610)

BLOCK DIAGRAM



PIN CONFIGURATION

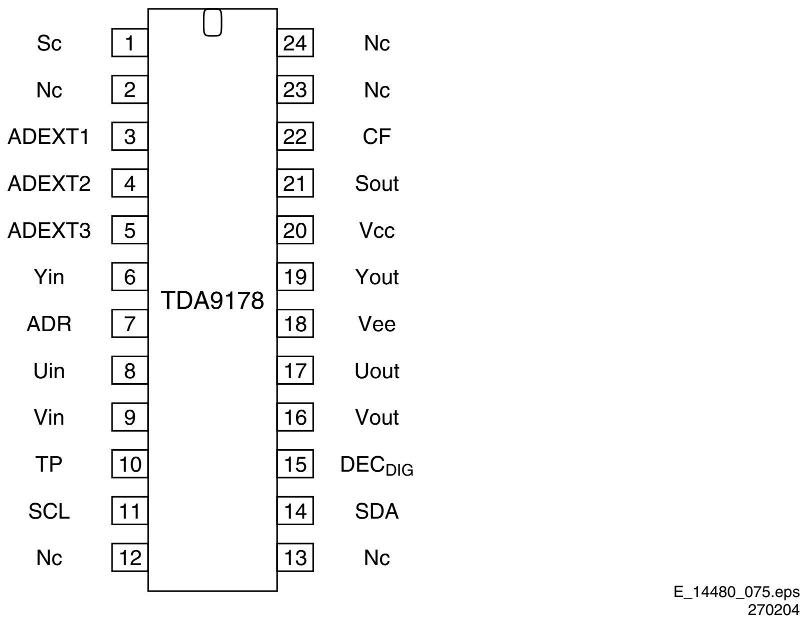


Figure 9-2 Internal Block Diagram and Pin Configuration

SPARE PARTS LIST

MODEL "A" = 27MT5405/17
MODEL "B" = 27PT8420/37
MODEL "C" = 30PW8420/37
MODEL "D" = 30MW5405/17

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

REF.	⚠	MODEL	DESCRIPTION	PART NO.
			CABINET PARTS	
0008		B	Back Cover	313912439661
0008		A	Back Cover	313912462731
0016		A	Mains Knob Assy	313913772081
0016		D	Mains Knob Assy	313913810881
0016		B	Mains Knob Assy	313917771181
0018		C	Light Guide	310430426111
0020		CD	Holder, Degaussing (4 Used)	313501301651
0021		AB	Holder, Degaussing (4 Used)	313501301661
0040		C	Mains Knob Assy	313912447701
0041		BD	PV2 Lens (USA)	313912439701
0050		C	Wordmark	314105000281
0050		B	Wordmark	314105000291
0050		AD	Wordmark	314105000391
0125		A	Directions For Use - Engilish	313912533651
0125		BC	Directions For Use - Engilish	313912533661
0125		D	Directions For Use - Engilish	314109520371
0126		A	Directions For Use -Spanish	313912534891
0126		D	Directions For Use -Spanish	314109520381
0145		BC	Quick Use Guide	313912533671
1081			Battery, Zinc, 1.5V (2-Pack)	929900065263
1085		BC	Remote Transmitter	313923804303
1085		AD	Remote Transmitter	313923805781
1099		AB	CRT A68QCU770XV5N	930196340527
1099		CD	CRT W76QEN691X100	932221772682
1101		AD	Trident Panel Assy	313918884161
1101		BC	Trident Panel Assy	313918887651
1114		A	Top Control Panel Assy	313918806031
1114		C	Top Control Panel Assy	313918887281

1114	B	Top Control Panel Assy	313926710901
1114	D	Top Control Panel Assy	314109710891
1116	C	Side A/V Panel Assy	313918887271
1116	ABD	Side A/V Panel Assy	313918887701
1120	B	HDMI Panel Assy	313918885191
1120	C	HDMI Panel Assy	313926713561
1150	AB	Main Chassis Assy	313918885401
1150	C	Main Chassis Assy	313918887931
1150	D	Main Chassis Assy	314109710871
1154	CD	CRT Panel Assy -16MHZ	313918883401
1160	BD	Front Interface Panel Assy	313918806011
1160	A	Front Interface Panel Assy	313918852711
1160	C	Front Interface Panel Assy	313918887291
5203	CD	Degaussing Coil	313912823941
5203	AB	Degaussing Coil	313912824031
5205	CD	Coil, DC-1351	242254945605
8190		AC Cord	242207000066
9950	C	Back cover Sub-Assy	312123755811
		MAIN CHASSIS	
CBA	AB	Main Chassis Assy	313918885401
CBA	C	Main Chassis Assy	313918887931
CBA	D	Main Chassis Assy	314109710871
1000		Tuner, V+U PLL	242254290141
1002		SAW Filter, 45MHz75, OFWM1971M	242254944518
1005		Connector, 3 Pin	241202000725
1050	C	MC-30PW8420/37-NA L05HD	313918887971
1050	D	MC-30MW5405-NA L05HD	314109710881
1137		SOC MDIN H 4P F MDC-041V-A Y	242202605659
1205		Crystal Resonator 24MHZ576 20P NR-18	242254301421
1206		4 Pin Board Connector	242202509406
1207		Connector, 7 Pin	242202511244
1223		12 Pin Cinch Socket	242202605463
1228		6 Pin Board Connector	242202508149
1250		Connector, 12 Pin	242202516052
1251		Connector, 10P F 2.50	242202516051
1256	AB	SOC CRT V 9P F	242250080087
1280		Connector, 5 Pin	242202512481
1331	AB	Connector, 5 Pin	242202510428
1351	AB	Connector, 7 Pin	242202511244
1361	AB	Connector, 3P M 2.50	242202516382
1401		Connector, 7 Pin	242202511244
1404		Connector, 2 Pin	242202516269
1451		Connector, 3 Pin	241202000725
1500	⚠	FUSE, T4A, 250V	242208610914
1501		SOC FUSE V 1P F PFC5000-0252 A	242209001101

1502		SOC FUSE V 1P F PFC5000-0252 A	242209001101
1503		RELAY 1P 12V 5A LKS1AF B	242213207467
1504		Connector, 2 Pin	242202516375
1505		Connector, 2 Pin	242202516269
1510		WIRE SIN 480 SIN 18ST BK	313913105621
1532	⚠	FUSE, T315MA, 250V	242208610465
1533		Connector, 12P M 2.00	242202510772
1682		Connector, 3 Pin	241202000725
1683		WIRE SIN 130 SIN 26ST	314105101621
1693		Connector, 6 Pin	242202512482
2001		Cap, 22p, 5%, 50v, Ceramic	319801632290
2004		Cap, 47n, +80/-20%, 50v, Ceramic	319802444730
2005		Cap, 4u7, 20%, 50v, Electrolytic	319802554780
2006		Cap, 470u, 20%, 16v, Electrolytic	319802524710
2007		Cap, 100n, 10%, 16v, Ceramic	319801731040
2008		Cap, 100u, 20%, 25v, Electrolytic	319802531010
2011		Cap, 100n, 10%, 16v, Ceramic	319801731040
2012		Cap, 100n, 10%, 16v, Ceramic	319801731040
2103		Cap, 330p, 10%, 50v, Ceramic	319801733310
2104		Cap, 330p, 10%, 50v, Ceramic	319801733310
2105		Cap, 10u, 20%, 50v, Electrolytic	319802551090
2106		Cap, 10u, 20%, 50v, Electrolytic	319802551090
2122		Cap, 330p, 10%, 50v, Ceramic	319801733310
2123		Cap, 2u2, 20%, 50v, Electrolytic	319802552280
2124		Cap, 330p, 10%, 50v, Ceramic	319801733310
2125		Cap, 2u2, 20%, 50v, Electrolytic	319802552280
2131		Cap, 330p, 10%, 50v, Ceramic	319801733310
2132		Cap, 2u2, 20%, 50v, Electrolytic	319802552280
2133		Cap, 330p, 10%, 50v, Ceramic	319801733310
2134		Cap, 2u2, 20%, 50v, Electrolytic	319802552280
2138		Cap, 100u, 20%, 10v, Electrolytic	319802511010
2201		Cap, 100n, 10%, 16v, Ceramic	319801731040
2203		Cap, 100u, 20%, 10v, Electrolytic	319802511010
2204		Cap, 22n, 10%, 25v, Ceramic	319801732230
2205		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2206		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2207		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2208		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2209		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2210		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2211		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2212		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2213		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2214		Cap, 100n, 10%, 16v, Ceramic	319801731040
2215		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2216		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240

2217		Cap, 470u, 20%, 10v, Electrolytic	319802514710
2218		Cap, 47u, 20%, 25v, Electrolytic	319802534790
2223		Cap, 100n, 10%, 16v, Ceramic	319801731040
2224		Cap, 100u, 20%, 25v, Electrolytic	319802531010
2225		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2226		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2229		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2233		Cap, 100n, 10%, 16v, Ceramic	319801731040
2234		Cap, 100u, 20%, 25v, Electrolytic	319802531010
2235		Cap, 6n8, 10%, 50v, Ceramic	319801736820
2238		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2239		Cap, 220n, +80/-20%, 16v, Ceramic	319801742240
2240		Cap, 1u5, 20%, 50v, Electrolytic	202002190137
2241		Cap, 22n, 10%, 25v, Ceramic	319801732230
2242		Cap, 100n, 10%, 16v, Ceramic	319801731040
2244		Cap, 2u2, +80/-20%, 10v, Ceramic	319801722250
2249		Cap, 100n, 10%, 16v, Ceramic	319801731040
2250		Cap, 100u, 20%, 25v, Electrolytic	319802531010
2251		Cap, 150n, 10%, 50v, Polyester	319801401540
2253		Cap, 10n, 10%, 50v, Ceramic	319801731030
2255		Cap, 10n, 10%, 50v, Ceramic	319801731030
2256		Cap, 100n, 10%, 16v, Ceramic	319801731040
2257		Cap, 3n3, 10%, 50v, Ceramic	319801733320
2260		Cap, 100n, 10%, 16v, Ceramic	319801731040
2261		Cap, 100n, 10%, 16v, Ceramic	319801731040
2262		Cap, 10n, 10%, 50v, Ceramic	319801731030
2263		Cap, 100n, 10%, 16v, Ceramic	319801731040
2264		Cap, 560p, 5%, 25v, Ceramic	319801635610
2265		Cap, 100u, 20%, 25v, Electrolytic	319802531010
2266		Cap, 2u2, +80/-20%, 10v, Ceramic	319801722250
2267		Cap, 2u2, +80/-20%, 10v, Ceramic	319801722250
2272		Cap, 100n, 10%, 16v, Ceramic	319801731040
2273		Cap, 100u, 20%, 25v, Electrolytic	319802531010
2274		Cap, 100n, 10%, 16v, Ceramic	319801731040
2275		Cap, 10u, 20%, 50v, Electrolytic	319802551090
2276		Cap, 100n, +80/-20%, 25v, Ceramic	319802321040
2279		Cap, 100p, 5%, 50v, Ceramic	319801631010
2280		Cap, 1u, +80/-20%, 10v, Ceramic	319801741050
2282		Cap, 1n, 10%, 50v, Ceramic	319801731020
2293		Cap, 1n, 5%, 25v, Ceramic	319801631020
2294		Cap, 5n6, 10%, 50v, Ceramic	223858615633
2295		Cap, 1n, 5%, 25v, Ceramic	319801631020
2330	AB	Cap, 100n, 10%, 250V, Metalized Polyester	202231800198
2331	AB	Cap, 10n, 10%, 50v, Ceramic	319801731030
2332	AB	Cap, 10n, 10%, 630v, Ceramic	202055890621
2333	AB	Cap, 1n, 10%, 50v, Ceramic	319801731020

2351		AB	Cap, 10uF, 20%, 250V Electrolytic	202203100241
2352		AB	Cap, 1n2, 10%, 2000v, Ceramic	202055890488
2361		AB	Cap, 47n, 10%, 50v, Polyester	319801404730
2362		AB	Cap, 1n, 10%, 50v, Ceramic	319801731020
2363		AB	Cap, 22u, 20%, 100v, Electrolytic	319802572290
2364		AB	Cap, 4n7, 10%, 400v, Metalized Polyester	222236555472
2365		AB	Cap, 4n7, 10%, 50v, Ceramic	319801734720
2367		AB	Cap, 10u, 20%, 100v, Electrolytic	319802571090
2368		AB	Cap, 22n, 10%, 250v, Ceramic	202055790734
2376		AB	Cap, 100n, 10%, 16v, Ceramic	319801731040
2387		AB	Cap, 10n, 10%, 50v, Ceramic	319801731030
2404			Cap, 47u, 20%, 160v, Electrolytic	202203100103
2409			Cap, 33n, 10%, 50v, Ceramic	319801703330
2410			Cap, 100n, 10%, 16v, Ceramic	319801701040
2411		AB	Cap, 820p, 10%, 2000v, Ceramic	202055890486
2411		CD	Cap, 220p, 10%, 2000v, Ceramic	319801972210
2412	⚠		Cap, 12n, 5%, 1K6V	202233300254
2413			Cap, 27n, 5%, 630v, Polypropylene	222237590223
2418	⚠	CD	Cap, 330n, 5%, 250V, Metalized Polypropylene	202233300259
2418	⚠	AB	Cap, 390n, 5%, 250V, Metalized Polypropylene	202233300276
2419		AB	Cap, 560n, 5%, 250v, Metalized Polypropylene	222247990025
2419		CD	Cap, 1u2, 5%, 250v, Metalized Polypropylene	222247990034
2421		CD	Cap, 220p, 10%, 2000v, Ceramic	319801972210
2422		CD	Cap, 220p, 10%, 2000v, Ceramic	319801972210
2426			Cap, 470p 10%, 200V, Ceramic	223893055618
2431			Cap, 680p, 10%, 500v, Ceramic	319801946810
2433		AB	Cap, 220p, 10%, 2000v, Ceramic	319801972210
2448			Cap, 470p 10%, 200V, Ceramic	223893055618
2449			Cap, 470u, 20%, 16v, Electrolytic	319802524710
2451		CD	Cap, 100n, 10%, 100v, Metalized Polyester	222236585104
2451		AB	Cap, 220n, 10%, 100v, Metalized Polyester	222236585224
2454			Cap, 470u, 20%, 16v, Electrolytic	319802524710
2458			Cap, 100n, 10%, 250v, Metalized Polyester	202231800109
2459			Cap, 470p 10%, 200V, Ceramic	223893055618
2460			Cap, 470u, 20%, 16v, Electrolytic	319802524710
2461			Cap, 22u, 20%, 100v, Electrolytic	319802572290
2462			Cap, 2n2, 10%, 50v, Ceramic	319801732220
2463			Cap, 2n2, 10%, 50v, Ceramic	319801732220
2464			Cap, 100n, +80/-20%, 25v, Ceramic	319802321040
2465			Cap, 220n, +80/-20%, 50v, Ceramic	223858019814
2466			Cap, 2u2, +80/-20%, 10v, Ceramic	319801722250
2467			Cap, 220n, +80/-20%, 50v, Ceramic	223858019814
2468			Cap, 470n, 10%, 100v, Metalized Polyester	222236525474
2469			Cap, 22u, 20%, 100v, Electrolytic	319802572290
2470		CD	Cap, 47n, 10%, 250v, Ceramic	202055790733
2470		AB	Cap, 100n, 10%, 100v, Ceramic	222260155649

2471		Cap, 100n, 10%, 16v, Ceramic	319801731040
2473		Cap, 15n, 10%, 50v, Ceramic	319801731530
2474		Cap, 150p, 5%, 50v, Ceramic	319801631510
2477		Cap, 8n2, 10%, 50v, Ceramic	223858015635
2478		Cap, 15n, 10%, 50v, Ceramic	319801701530
2488		Cap, 1u, 10%, 50v, Polyester	319801401050
2491		Cap, 4u7, +80/-20%, 10v, Ceramic	202055296305
2492		Cap, 470p 10%, 200V, Ceramic	223893055618
2493		Cap, 470p 10%, 200V, Ceramic	223893055618
2494		Cap, 470p 10%, 200V, Ceramic	223893055618
2495		Cap, 100n, 10%, 50V Ceramic	202055296424
2496		Cap, 10n, 10%, 50v, Ceramic	319801731030
2497		Cap, 220p, 5%, 50v, Ceramic	319801632210
2500		Cap, 470n, 20%, 275V, Metalized Polyp	222233822474
2501		Cap, 2n2, 10%, 1000v, Ceramic	319801952220
2503		Cap, 2n2, 10%, 1000v, Ceramic	319801952220
2504		Cap, 2n2, 10%, 1000v, Ceramic	319801952220
2505		Cap, 1000uF, 20%, 200V Electrolytic	202002490747
2508	⚠	Cap, 100n, 20%, 275V, Metalized Polyp	222233822104
2509	⚠	Cap, 1n5, 20%, 250V Safety, Ceramic	225281195022
2510		Cap, 22u, 20%, 50v, Electrolytic	319802552290
2511		Cap, 22u, 20%, 50v, Electrolytic	319802552290
2512		Cap, 100n, 10%, 16v, Ceramic	319801731040
2513		Cap, 470p, 5%, 50v, Ceramic	319801634710
2514		Cap, 1n5, 10%, 2000v, Ceramic	319801971520
2515		Cap, 1n, 10%, 50v, Ceramic	319801731020
2516		Cap, 100n, 10%, 16v, Ceramic	319801731040
2517		Cap, 1n, 10%, 50v, Ceramic	319801731020
2519		Cap, 470p, 5%, 50v, Ceramic	319801634710
2520		Cap, 100n, 10%, 16v, Ceramic	319801731040
2521		Cap, 47n, 10%, 16v, Ceramic	319801734730
2522		Cap, 470p, 5%, 50v, Ceramic	319801634710
2523		Cap, 330p, 10%, 1000v, Ceramic	319801963310
2524		Cap, 1n, 10%, 100v, Ceramic	223860056623
2525		Cap, 470p, 5%, 50v, Ceramic	319801634710
2528		Cap, 470n, 10%, 50v, Polyester	319801404740
2534		Cap, 470u, 20%, 16v, Electrolytic	319802524710
2535		Cap, 4700uF, 20%, 6V3, Electrolytic	202002100092
2536		Cap, 1000u, 20%, 16v, Electrolytic	319802621020
2538		Cap, 1n, 10%, 50v, Ceramic	319801731020
2539		Cap, 470p, 10%, 500v, Ceramic	319801944710
2541		Cap, 47u, 20%, 25v, Electrolytic	319802534790
2542	⚠	Cap, 1n5, 20%, 250v, Ceramic	202055490199
2543		Cap, 100n, 10%, 16v, Ceramic	319801731040
2544		Cap, 2n2, 10%, 500v, Ceramic	319801942220
2551		Cap, 1n, 10%, 1000v, Ceramic	319801961020

2552		Cap, 150uF, 20%, 160V Electrolytic	202002100112
2555		Cap, 47u, 20%, 16v, Electrolytic	319802824790
2556		Cap, 47u, 20%, 16v, Electrolytic	319802824790
2557		Cap, 47u, 20%, 16v, Electrolytic	319802824790
2558		Cap, 47u, 20%, 16v, Electrolytic	319802824790
2561		Cap, 1n, 10%, 50v, Ceramic	319801911020
2562		Cap, 2u2, 20%, 25v, Electrolytic	202001293402
2563		Cap, 2u2, 20%, 25v, Electrolytic	202001293402
2564		Cap, 100n, 10%, 50v, Ceramic	222258015649
2565		Cap, 1n, 10%, 100v, Ceramic	223860056623
2570	⚠	Cap, 470p, 10%, v, Ceramic	202055490169
2571		Cap, 15n, 10%, 50v, Ceramic	319801731530
2572		Cap, 10n, 10%, 50v, Ceramic	319801731030
2578		Cap, 2n2, 10%, 50v, Ceramic	319801732220
2582		Cap, 1uF, +80/-20%, 25V, Ceramic	202055296723
2583		Cap, 10u, 10%, 6.3v, Ceramic	202055296637
2584		Cap, 470u, 20%, 6.3v, Electrolytic	319802504710
2585		Cap, 1uF, +80/-20%, 25V, Ceramic	202055296723
2587		Cap, 470u, 20%, 10v, Electrolytic	319802514710
2590		Cap, 4700uF, 20%, 10V Electrolytic	202002100101
2591		Cap, 1n, 10%, 50v, Ceramic	319801731020
2592		Cap, 68p, 5%, 50v, Ceramic	319801636890
2601		Cap, 1n, 5%, 25v, Ceramic	319801631020
2611		Cap, 470u, 20%, 16v, Electrolytic	319802524710
2615		Cap, 4u7, +80/-20%, 10v, Ceramic	202055296305
2617		Cap, 100n, 10%, 16v, Ceramic	319801731040
2620		Cap, 100n, 10%, 16v, Ceramic	319801731040
2621		Cap, 100u, 20%, 25v, Electrolytic	319802531010
2623		Cap, 100n, 10%, 16v, Ceramic	319801731040
2624		Cap, 100u, 20%, 25v, Electrolytic	319802531010
2625		Cap, 2u2, 10%, 6v3, Ceramic	202255205615
2633		Cap, 1u, +80/-20%, 10v, Ceramic	319801741050
2634		Cap, 1u, +80/-20%, 10v, Ceramic	319801741050
2917		Cap, 100u, 20%, 6.3v, Electrolytic	319803227190
2918		Cap, 4u7, +80/-20%, 10v, Ceramic	202055296305
2986		Cap, 100n, 10%, 16v, Ceramic	319801731040
2987		Cap, 100n, 10%, 16v, Ceramic	319801731040
2988		Cap, 100n, 10%, 16v, Ceramic	319801731040
2989		Cap, 1u, +80/-20%, 10v, Ceramic	319801741050
2990		Cap, 1n, 5%, 25v, Ceramic	319801631020
2992		Cap, 1u, +80/-20%, 10v, Ceramic	319801741050
2993		Cap, 1n, 5%, 25v, Ceramic	319801631020
2994		Cap, 22n, 10%, 25v, Ceramic	319801732230
2995		Cap, 22n, 10%, 25v, Ceramic	319801732230
2996		Cap, 47n, +80/-20%, 50v, Ceramic	319802444730
2997		Cap, 47n, +80/-20%, 50v, Ceramic	319802444730

2998	Cap, 2u2, +80/-20%, 10v, Ceramic	319801722250
3003	Res, 10K, 5%, 1/16W, Metalized Glass	319802131030
3004	Res, 68K, 5%, 1/16W, Metalized Glass	319802136830
3005	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3101	Res, 68 ohm, 5%, 1/6W, Carbon Film	319801106890
3103	Res, 150 ohm, 5%, 1/6W, Carbon Film	319801101510
3104	Res, 220K, 5%, 1/16W, Metalized Glass	319802132240
3105	Res, 150 ohm, 5%, 1/6W, Carbon Film	319801101510
3106	Res, 220K, 5%, 1/16W, Metalized Glass	319802132240
3121	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3123	Res, 22K, 5%, 1/6W, Carbon Film	319801102230
3124	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3125	Res, 22K, 5%, 1/6W, Carbon Film	319801102230
3126	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3129	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3130	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3131	Res, 22K, 5%, 1/6W, Carbon Film	319801102230
3132	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3133	Res, 22K, 5%, 1/6W, Carbon Film	319801102230
3134	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3135	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3167	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3168	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3169	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3170	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3171	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3172	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3173	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3174	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3201	Res, 1K, 5%, 1/6W, Carbon Film	319801101020
3202	Res, 3K3, 5%, 1/16W, Metalized Glass	319802133320
3203	Res, 150K, 5%, 1/16W, Metalized Glass	319802131540
3204	Res, 3K3, 5%, 1/16W, Metalized Glass	319802133320
3205	Res, 12K, 5%, 1/16W, Metalized Glass	319802131230
3206	Res, 5K6, 5%, 1/16W, Metalized Glass	319802135620
3207	Res, 10 ohm, 5%, 1/16W, Metalized Glass	319802131090
3208	Res, 27K, 5%, 1/16W, Metalized Glass	319802132730
3209	Res, 1 ohm, 5%, 1/16W, Metalized Glass	319802131080
3210	Res, 1 ohm, 5%, 1/16W, Metalized Glass	319802131080
3211	Res, 27K, 5%, 1/16W, Metalized Glass	319802132730
3212	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3214	Res, 10 ohm, 5%, 1/16W, Metalized Glass	319802131090
3215	Res, 4K7, 5%, 1/6W, Carbon Film	319801104720
3216	Res, 10 ohm, 5%, 1/16W, Metalized Glass	319802131090
3218	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3219	Res, 10K, 5%, 1/16W, Metalized Glass	319802131030

3220		Res, 150 ohm, 5%, 1/16W, Metalized Glass	319802131510
3221		Res, 270 ohm, 5%, 1/16W, Metalized Glass	319802132710
3222		Res, 330 ohm, 5%, 1/16W, Metalized Glass	319802133310
3229		Res, 1K5, 5%, 1/16W, Metalized Glass	319802131520
3230		Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3231		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3232		Res, 12K, 5%, 1/16W, Metalized Glass	319802131230
3235		Res, 470 ohm, 5%, 1/16W, Metalized Glass	319802134710
3236		Res, 470 ohm, 5%, 1/16W, Metalized Glass	319802134710
3241		Res, 39K, 5%, 1/6W, Carbon Film	319801103930
3242		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3247		Res, 390 ohm, 5%, 1/16W, Metalized Glass	319802133910
3248		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3249		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3253		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3257		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3258		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3260		Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3261		Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3263		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3264		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3267		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3269		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3270		Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3274		Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3275		Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3281		Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3282		Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3283		Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3284		Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3285		Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3287		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3289		Res, Zero ohm, "Chip" Jumper	319802190030
3290		Res, Zero ohm, "Chip" Jumper	319802190030
3296		Res, 5K6, 5%, 1/16W, Metalized Glass	319802135620
3298		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3331	AB	Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3332	AB	Res, 1K, 20%, 1/2W, Carbon Film	319801301020
3333	AB	Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3334	AB	Res, 1K, 20%, 1/2W, Carbon Film	319801301020
3335	AB	Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3336	AB	Res, 1K, 20%, 1/2W, Carbon Film	319801301020
3351	AB	Res, 100 ohm, 5%, 1/3W, Metal Film	230620403101
3354	AB	Res, 1K5, 20%, 1/2W, Carbon Film	319801301520
3356	AB	Res, 10 ohm, 1%, Metal Film	319803910090
3357	AB	VDR 0603 1MA/18V MAX 35V	212255200004

3361	AB	Res, 680 ohm, 5%, 1/16W, Metalized Glass	319802136810
3362	AB	Res, 10 ohm, 5%, 1/3W, Metal Film	230620403109
3363	AB	Res, 820 ohm, 5%, 1/16W, Metalized Glass	319802138210
3364	AB	Res, 1R8, 1%, 1/16W, Metalized Glass	232270461808
3365	AB	Res, 10 ohm, 5%, 1/6W, Carbon Film	319801101090
3366	AB	Res, 68K, 5%, 1/6W, Carbon Film	319801106830
3367	AB	Res, 68K, 5%, 1/6W, Carbon Film	319801106830
3368	AB	Res, 820 ohm, 5%, 1/16W, Metalized Glass	319802138210
3369	AB	Res, 10 ohm, 5%, 1/16W, Metalized Glass	319802131090
3370	AB	Res, 1R8, 1%, 1/16W, Metalized Glass	232270461808
3371	AB	Res, 470 ohm, 5%, 1/6W, Carbon Film	319801104710
3372	AB	Res, 8K2, 5%, 1/16W, Metalized Glass	319802138220
3373	AB	Res, 4K7, 5%, 5W, Metal Film	232225741472
3375	AB	Res, 1K8, 5%, 1/16W, Metalized Glass	319802131820
3376	AB	Res, 330 ohm, 5%, 1/16W, Metalized Glass	319802133310
3377	AB	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319802132210
3388	AB	Res, 33 ohm, 5%, 1/16W, Metalized Glass	319802133390
3389	AB	Res, 33 ohm, 5%, 1/16W, Metalized Glass	319802133390
3401		Res, 47K, 1%, Metal Film	319803947030
3402		Res, 330 ohm, 5%, 1/6W, Carbon Film	319801103310
3408		Res, 100K, 5%, 1/16W, Metalized Glass	319802131040
3413		Res, 1K, 5%, 1/6W, Carbon Film	319801101020
3414		Res, 4R7, 1%, Metal Film	319803947080
3415		Res, 4R7, 1%, Metal Film	319803947080
3416		Res, 47 ohm, 5%, 1/16W, Metalized Glass	319802134790
3418		Res, 100 ohm, 5%, 1/10W, Metalized Glass	319802151010
3419		Res, 4R7, 1%, Metal Film	319803947080
3421	ABC	Res, 22 ohm, 1%, 3/5W, Metal Film	231291512209
3421	D	Res, 22 ohm, 1%, 1/16W Metal Film	319803922090
3424	CD	VDR DC 1MA/612V S MAX 1100V A	232259214217
3425	CD	VDR DC 1MA/612V S MAX 1100V A	232259214217
3426		Res, 100K, 5%, 1/16W, Metalized Glass	319802131040
3427		Res, 680K, 5%, 1/16W, Metalized Glass	319802136840
3428		Res, 22K, 5%, 1/16W, Metalized Glass	319802132230
3431		Res, 82k ohm, 1%, 1/16W, Metal Film	319803982030
3433		Res, 4R7, 1%, Metal Film	319803947080
3434	CD	Res, 3K9, 5%, 1/16W, Metalized Glass	319802133920
3434	AB	Res, 5K6, 5%, 1/16W, Metalized Glass	319802135620
3436		Res, 680K, 5%, 1/16W, Metalized Glass	319802136840
3437		Res, 22K, 5%, 1/16W, Metalized Glass	319802132230
3439		Res, 10K, 5%, 1/16W, Metalized Glass	319802131030
3440		Res, 2R2, 1%, Metal Film	319803922080
3441		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3450		Res, 1 ohm, 5%, 1/3W, Metal Film	230620403108
3451		Res, 4R7, 1%, Metal Film	319803947080
3453		Res, 56K, 5%, 1/16W, Metalized Glass	319802135630

3455			Res, Fuse, 0R27, 5%	230620703277
3456			Res, Fuse, 0R27, 5%	230620703277
3458			Res, 4R7, 5%, 1/2W, Metal Film	230620703478
3459		AB	Res, 820K, 5%, 1/16W, Metalized Glass	232270260824
3459		CD	Res, 470K, 5%, 1/16W, Metalized Glass	319802134740
3460			Res, 56K, 1%, 1/16W, Metalized Glass	232270465603
3461			Res, 1K5, 5%, 1/16W, Metalized Glass	319802131520
3462			Res, 18K, 1%, 1/16W, Metalized Glass	232270461803
3463			Res, 1K5, 5%, 1/16W, Metalized Glass	319802131520
3466			Res, 1R5, 5%, 1/3W, Metal Film	230620403158
3467			Res, 220 ohm, 5%, 1/6W, Carbon Film	319801102210
3468			Res, 220 ohm, 5%, 1/6W, Carbon Film	319801102210
3469			Res, 22K, 5%, 1/6W, Carbon Film	319801102230
3471		AB	Res, 1 ohm, 1%, Metal Film	319803910080
3471		CD	Res, 2R2, 1%, Metal Film	319803922080
3472		AB	Res, 1R2, 1%, 3/5W, Metal Film	231291511208
3472		CD	Res, 1R5, 1%, Metal Film	319803915080
3473			Res, 15 ohm, 5%, 1 1/3W, Metal Film	319801221590
3477			Res, 1K5, 5%, 1/6W, Carbon Film	319801101520
3478			Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3480			Res, 4M7, 5%, 1/10W, Metalized Glass	319802154750
3481			Res, 1K, 5%, 1/6W, Carbon Film	319801101020
3485	⚠		Res, Fuse, 0R47, 5%	230620703477
3486			Res, 1 ohm, 5%, 1/3W, Metal Film	230620403108
3488			Res, 220K, 5%, 1/4W, Metalized Glass	232224153224
3489			Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3490			Res, 150 ohm, 1%, Metal Film	319803915010
3491			Res, 12K, 5%, 1/16W, Metalized Glass	319802131230
3492			Res, 18K, 5%, 1/16W, Metalized Glass	319802131830
3493			Res, 2R2, 5%, 1/2W, Metal Film	230620703228
3499			Res, 1M, 5%, 1/6W, Carbon Film	319801101050
3500			Res, 3M3, 5%, 1/2W, Metalized Glass	232224213335
3501			Res, 3M3, 5%, 1/2W, Metalized Glass	232224213335
3502			Res, 220 ohm, 20%, 1/2W, Carbon Film	319801302210
3503	⚠		Surge Protector, DSP-301N-A21F A	242254943073
3504			Res, 1M5, 5%, 1/2W, Metalized Glass	232224213155
3505			VDR, 1mA/612V	212255000158
3506			Res, 3M3, 5%, 1/2W, Metalized Glass	232224213335
3510			NTC DC B57364 5W1 S 2R0 PM20 B	212261200077
3511			Res, 4R7, 5%, 1/6W, Carbon Film	319801104780
3512			Res, 1K2, 5%, 1/16W, Metalized Glass	319802131220
3513			Res, 1K, 5%, 1/3W, Metal Film	230620403102
3514			Res, 100 ohm, 5%, 1/3W, Metal Film	230620403101
3515			Res, 1K, 5%, 1/6W, Carbon Film	319801101020
3516			Res, 0R1, 5%, 3/5W, Metal Film	319801211070
3517			Res, 300k, 1%, Metalized Glass	232270463004

3518	Res, 3K3, 5%, 1/16W, Metalized Glass	319802133320
3519	Res, 15K, 5%, 1/6W, Carbon Film	319801101530
3520	Res, 0R12, 5%, 1W, Metal Oxide	212010500036
3521	Res, 3K3, 5%, 1/6W, Carbon Film	319801103320
3522	Res, 56K, 5%, 1/16W, Metalized Glass	319802135630
3524	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3525	Res, 300K, 1%, Metal Film	319803930040
3526	Res, 150 ohm, 5%, 1/8W, Metalized Glass	232275061501
3527	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3528	Res, 1M, 5%, 1/16W, Metalized Glass	319802131050
3529	Res, 2M2, 5%, 1/16W, Metalized Glass	319802132250
3530	Res, 56K, 5%, 1/16W, Metalized Glass	319802135630
3531	Res, 1K, 5%, 1/6W, Carbon Film	319801101020
3532	Res, 1 ohm, 5%, 1/10W, Metalized Glass	319802151080
3533	Res, 1R2, 5%, 1/8W, Metalized Glass	232273061128
3534	Res, 68 ohm, 5%, 1/6W, Carbon Film	319801106890
3536	Res, 220 ohm, 5%, 1/3W, Metal Film	230620403221
3537	Res, 68K, 5%, 1/16W, Metalized Glass	319802136830
3539	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3541	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3542	Res, 680 ohm, 5%, 1/16W, Metalized Glass	319802136810
3543	Res, 10K, 5%, 1/16W, Metalized Glass	319802131030
3544	Res, 2K4, 1%, 1/16W, Metalized Glass	232270462402
3545	Res, 820 ohm, 1%, 1/16W, Metalized Glass	232270468201
3546	Res, 100K, 5%, 1/16W, Metalized Glass	319802131040
3547	Res, 68K, 5%, 1/16W, Metalized Glass	319802136830
3549	Res, 3K3, 5%, 1/6W, Carbon Film	319801103320
3550	Res, 220K, 5%, 1/16W, Metalized Glass	319802132240
3553	Res, 27K, 5%, 1/16W, Metalized Glass	319802132730
3560	Res, 33 ohm, 5%, 1W, Metal Film	319801213390
3561	Res, 220 ohm, 5%, 1/10W, Metalized Glass	319802152210
3562	Res, 220 ohm, 5%, 1/10W, Metalized Glass	319802152210
3563	Res, 220 ohm, 5%, 1/6W, Carbon Film	319801102210
3564	PTC, 3R, 144v, 20%	212266300019
3565	Res, 100K, 5%, 1/16W, Metalized Glass	319802131040
3567	Res, 3K3, 5%, 1/16W, Metalized Glass	319802133320
3568	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3571	Res, 470 ohm, 5%, 1/10W, Metalized Glass	319802154710
3573	Res, 15K, 5%, 1/16W, Metalized Glass	319802131530
3574	Res, 100K, 5%, 1/10W, Metalized Glass	319802151040
3575	Res, 82k ohm, 1%, 1/16W, Metal Film	319803982030
3576	Res, 1K5, 1%, 1/16W, Metalized Glass	232270461502
3579	Res, 2K2, 5%, 1/16W, Metalized Glass	319802132220
3588	Res, 330K, 5%, 1/16W, Metalized Glass	319802133340
3589	Res, 10K, 5%, 1/16W, Metalized Glass	319802131030
3593	Res, 10K, 5%, 1/16W, Metalized Glass	319802131030

3594	Res, 22K, 5%, 1/16W, Metalized Glass	319802132230
3595	Res, 100K, 5%, 1/16W, Metalized Glass	319802131040
3596	Res, 10K, 5%, 1/16W, Metalized Glass	319802131030
3597	Res, 220K, 5%, 1/16W, Metalized Glass	319802132240
3598	Res, 330K, 5%, 1/4W, Metalized Glass	232224153334
3599	Res, 1M5, 5%, 1/4W, Metalized Glass	232224153155
3601	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3604	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3605	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3606	Res, 56K, 5%, 1/6W, Carbon Film	319801105630
3607	Res, 10K, 5%, 1/16W, Metalized Glass	319802131030
3608	Res, 27K, 5%, 1/16W, Metalized Glass	319802132730
3609	Res, 330 ohm, 5%, 1/16W, Metalized Glass	319802133310
3634	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3635	Res, 39K, 5%, 1/16W, Metalized Glass	319802133930
3637	Res, 47 ohm, 5%, 1/16W, Metalized Glass	319802134790
3647	Res, 33K, 5%, 1/16W, Metalized Glass	319802133330
3690	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319802132210
3984	Res, 56K, 5%, 1/6W, Carbon Film	319801105630
3985	Res, 39K, 5%, 1/16W, Metalized Glass	319802133930
3986	Res, 27K, 5%, 1/16W, Metalized Glass	319802132730
3988	Res, 10K, 5%, 1/16W, Metalized Glass	319802131030
3989	Res, 10 ohm, 5%, 1/16W, Metalized Glass	319802131090
3991	Res, 39K, 5%, 1/16W, Metalized Glass	319802133930
3992	Res, 10K, 5%, 1/16W, Metalized Glass	319802131030
3993	Res, 10 ohm, 5%, 1/16W, Metalized Glass	319802131090
3994	Res, 68K, 5%, 1/16W, Metalized Glass	319802136830
3995	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3996	Res, 680K, 5%, 1/16W, Metalized Glass	319802136840
3997	Res, 100K, 5%, 1/16W, Metalized Glass	319802131040
3998	Res, 10K, 5%, 1/16W, Metalized Glass	319802131030
4000	Res, Zero ohm, "Chip" Jumper	319802190030
4001	Res, Zero ohm, "Chip" Jumper	319802190030
4002	Res, Zero ohm, "Chip" Jumper	319802190030
4003	Res, Zero ohm, "Chip" Jumper	319802190030
4006	Res, Zero ohm, "Chip" Jumper	319802190030
4013	Res, Zero ohm, "Chip" Jumper	319802190030
4015	Res, Zero ohm, "Chip" Jumper	319802190030
4116	Res, Zero ohm, "Chip" Jumper	319802190030
4145	Res, Zero ohm, "Chip" Jumper	319802190030
4160	Res, Zero ohm, "Chip" Jumper	319802190030
4201	Res, Zero ohm, "Chip" Jumper	319802190020
4209	Res, Zero ohm, "Chip" Jumper	319802190030
4221	Res, Zero ohm, "Chip" Jumper	319802190030
4222	Res, Zero ohm, "Chip" Jumper	319802190030
4223	Res, Zero ohm, "Chip" Jumper	319802190020

4226		Res, Zero ohm, "Chip" Jumper	319802190030
4227		Res, Zero ohm, "Chip" Jumper	319802190030
4251		Res, Zero ohm, "Chip" Jumper	319802190030
4253		Res, Zero ohm, "Chip" Jumper	319802190020
4297		Res, Zero ohm, "Chip" Jumper	319802190020
4328	AB	Res, Zero ohm, "Chip" Jumper	319802190030
4329	AB	Res, Zero ohm, "Chip" Jumper	319802190030
4330	AB	Res, Zero ohm, "Chip" Jumper	319802190030
4334	AB	Res, Zero ohm, "Chip" Jumper	319802190030
4470		Res, Zero ohm, "Chip" Jumper	319802190020
4495		Res, Zero ohm, "Chip" Jumper	319802190030
4527		Res, Zero ohm, "Chip" Jumper	319802190030
4533		Res, Zero ohm, "Chip" Jumper	319802190020
4540		Res, Zero ohm, "Chip" Jumper	319802190030
4551		Res, Zero ohm, "Chip" Jumper	319802190030
4604		Res, Zero ohm, "Chip" Jumper	319802190030
4612		Res, Zero ohm, "Chip" Jumper	319802190020
4614		Res, Zero ohm, "Chip" Jumper	319802190030
4617		Res, Zero ohm, "Chip" Jumper	319802190030
4642		Res, Zero ohm, "Chip" Jumper	319802190030
4644		Res, Zero ohm, "Chip" Jumper	319802190030
4646		Res, Zero ohm, "Chip" Jumper	319802190030
4649		Res, Zero ohm, "Chip" Jumper	319802190030
4653		Res, Zero ohm, "Chip" Jumper	319802190030
4691		Res, Zero ohm, "Chip" Jumper	319802190030
4692		Res, Zero ohm, "Chip" Jumper	319802190030
4694		Res, Zero ohm, "Chip" Jumper	319802190030
4992		Res, Zero ohm, "Chip" Jumper	319802190020
5001		Fixed Inductor, 100MHz, 120 ohm	319801890030
5002		Coil, 390n	319801833970
5201		Fixed, Inductor, 100MHz, 50R	319801890010
5202		Fixed Inductor, 100MHz, 120 ohm	319801890030
5203		Fixed Inductor, 100MHz, 120 ohm	319801890030
5205		Fixed Inductor, 100MHz, 120 ohm	319801890030
5206		Fixed Inductor, 100MHz, 120 ohm	319801890030
5207		Fixed Inductor, 100MHz, 120 ohm	319801890030
5208		Fixed, Inductor, 100MHz, 50R	319801890010
5209		Fixed Inductor, 100MHz, 120 ohm	319801890030
5210		Fixed Inductor, 100MHz, 120 ohm	319801890030
5211		Fixed Inductor, 100MHz, 120 ohm	319801890030
5212		Fixed Inductor, 100MHz, 120 ohm	319801890030
5213		Fixed Inductor, 100MHz, 120 ohm	319801890030
5214		Fixed Inductor, 100MHz, 120 ohm	319801890030
5215		Fixed Inductor, 100MHz, 120 ohm	319801890030
5216		Fixed, Inductor, 100MHz, 50R	319801890010
5331	AB	Coil, 1u	319801831080

5361	AB	Fixed, Inductor, 100MHz, 50R	319801890010
5401		COI LINCOR 3UH9 CL15420-00 Y	242253601067
5402		Transformer	242253100057
5408	CD	COI BRIDGE W7131-003 B	242253102334
5408	AB	COI BRIDGE W7132-004 Y	242253102357
5450	CD	Transformer, LOT	242253100067
5450	AB	Transformer, LOT	242253100068
5452		Coil, 10u	319801821090
5456	CD	Transformer	242253100078
5457		Inductor, Fixed, 100MHZ, 60 ohm	242254945186
5458		Inductor, Fixed, 100MHZ, 60 ohm	242254945186
5459		Coil, 560n	242253595339
5501		FIL MAINS 4MH 2A8 DMF2404 Y	242254900408
5504		TFM SMT LAYER SS28412-00 B	242253100066
5506		FIL MAINS 30MH 3A DMF3530 Y	242254945783
5511		Fixed, Inductor, 100MHz, 50R	319801890010
5512		TFM SMT LAYER SS42408-00 B	242253100064
5521		Fixed, Inductor, 100MHz, 50R	319801890010
5523		Inductor, Fixed, 100Mhz, 120 ohm	319801890070
5524		Coil, 4u7	319801874780
5526		Coil, 4u7	319801874780
5527		Coil, 4u7	319801874780
5551		Fixed, Inductor, 100MHz, 50R	319801890010
5552		Coil, 27u	242253595366
5561		Fixed, Inductor, 100MHz, 50R	319801890010
5562		Fixed, Inductor, 100MHz, 50R	319801890010
5601		Res, Zero ohm, "Chip" Jumper	319802190030
6001		Zener Diode, 33 volt	319801023390
6006		Zener Diode, 8.2 volt	319801058280
6106		Zener Diode, 15 volt	319802051590
6132		Zener Diode, 15 volt	319802051590
6203		Diode, Signal, BAS316	319801010630
6204		Diode, Rect, SS14	319801010710
6207		Diode, Signal, BAS316	319801010630
6209		Diode, Signal, BAT54	319801010660
6331	AB	Diode, Signal, BAV21	319801010070
6332	AB	Diode, Signal, BAV21	319801010070
6333	AB	Diode, Signal, BAV21	319801010070
6361	AB	Diode, Signal, 1N4148WS	932220595685
6403		Diode, Rect, RGP10D	933751660673
6404		Diode, Rect, DMV1500M	932216961687
6449		Zener Diode, 15 volt	319802051590
6452		Diode, Rect, RGP10D	933751660673
6453		Diode, Rect, RGP10G	933493960673
6456		Diode, Rect, BYV27-200	932212672673
6457		Diode, Rect, BYV27-200	932212672673

6458	Diode, Signal, BAS316	319801010630
6461	Diode, Rect, RGP10D	933751660673
6464	Zener Diode, 15 volt	319802051590
6466	Diode, Rect, RGP10D	933751660673
6467	Diode, Rect, BYV29X-500	934055559127
6471	Diode, Rect, RGP10D	933751660673
6476	Zener Diode, 6.8 volt	933500610133
6480	Zener Diode, 15 volt	934054863115
6481	Diode, Signal, BAS316	319801010630
6482	Zener Diode, 6.8 volt	319802056880
6483	Diode, Signal, BAS316	319801010630
6484	Diode, Signal, BAS316	319801010630
6487	Diode, Signal, BAS316	319801010630
6489	Diode, Signal, BAS316	319801010630
6490	Diode, Signal, BAS316	319801010630
6492	Zener Diode, 8.2 volt	319802058280
6500	Diode, Bridge Rect, GBU6JL-7002	932213808667
6511	Diode, Rect, RGP10D	933751660673
6514	Diode, Signal, BAS316	319801010630
6531	Diode, Signal, BAS316	319801010630
6532	Diode, BAV21WS	932219745703
6533	Diode, Rect, RGP10D	933751660673
6534	Diode, Signal, BAS316	319801010630
6536	Diode, Signal, BAS316	319801010630
6537	Diode, BAV21WS	932219745703
6538	Diode, BAV21WS	932219745703
6539	Diode, Rect, SB360	319801010700
6540	Diode, Signal, BAS316	319801010630
6541	Zener Diode, 12 volt	319802051290
6542	Zener Diode, 6.2 volt	932212911685
6543	Diode, Signal, BAS316	319801010630
6545	Diode, Rect, SB360	319801010700
6546	Diode, Rect, STPS10L25D	932220957687
6549	Diode, Regulator, UDZS13B	932221282685
6551	Diode, Rectifier, BYT28-500	933744380127
6553	Diode, Signal, BAS316	319801010630
6554	Diode, Signal, BAS316	319801010630
6562	Diode, Rect, SB360	319801010700
6564	Diode, Rect, PBYR10100	934020570127
6575	Diode, Rect, 1N5392	932200516683
6602	Diode, Signal, BAV99	319801010620
6694	Zener Diode, 5.1 volt	319802055180
6990	Diode, Signal, BAS316	319801010630
7104	Transistor, NPN, IMX1	932205428685
7105	Transistor, NPN, BC847B(COL)	319801042030
7200	IC, SM TDA12000H1/N1B50	935274994557

7201		Transistor, NPN, IMX1	932205428685
7203		Transistor, PNP, BC327-25(COL)	319802043430
7204		Transistor, PNP, BC327-25(COL)	319802043430
7209		Transistor, FET Signal, BSH103	934054713215
7210		Transistor, FET Signal, BSH103	934054713215
7211		Transistor, PNP, BC857B(COL)	319801042150
7212		Transistor, PNP, BC857B(COL)	319801042150
7330	AB	IC, TDA6108JF/N1	935256140112
7361	AB	Transistor, NPN, BC847B(COL)	319801042030
7362	AB	Transistor, PNP, BC857B(COL)	319801042150
7363	AB	Transistor, KTB631KY	932219505687
7364	AB	Transistor, KTD600KY	932219514687
7376	AB	Transistor, NPN, BC847B(COL)	319801042030
7404		Transistor, FET Signal, BSH103	934054713215
7405		Transistor, NPN, BU2527DX	934049680127
7406		Transistor, FET, FQPF3N60	932216034687
7407		Transistor, NPN, PDTC144ET	319801044130
7408		Transistor, PNP, BC856B	933589730215
7451		IC, E-TDA8177F	932214436687
7509		Transistor, FET, SI2307DS-E3	932219077685
7510		IC, SM TEA1506T/N1	935272043518
7511		IC, SM TEA1506T/N1	935272043518
7512		Transistor, FET, FQPF13N50C	932221806687
7513		Optic Coupler, TCET1103(G)	932214014667
7514		Transistor, NPN, BC847B(COL)	319801042030
7516		Optic Coupler, TCET1103(G)	932214014667
7525		Transistor, FET, STP5NK80ZFP	932219421687
7532		Transistor, PNP, BC857B(COL)	319801042150
7535		Transistor, FET, SI2307DS-E3	932219077685
7541		Transistor, PNP, BC857B(COL)	319801042150
7542		IC, TL431CZ	319801070510
7543		IC, L78L08ACZ	932213067676
7544		IC, LE50CZ	932211239676
7545		Transistor, FET, SI2333DS-E3	932221975685
7547		Transistor, NPN, PDTC143ZT	934054700215
7549		Transistor, NPN, IMX1	932205428685
7561		Transistor, NPN, PDTC143ZT	934054700215
7567		Transistor, NPN, BC847B(COL)	319801042030
7571		IC, TL431ACZ	319801070500
7573		Transistor, NPN, PDTC114ET	319801044110
7585		Transistor, PNP, BC857B(COL)	319801042150
7601		IC, M24C16-WBN6	932214725682
7604		Transistor, NPN, BC847B(COL)	319801042030
7605		Transistor, PNP, BC327-25(COL)	319802043430
7606		Transistor, NPN, BC847B(COL)	319801042030
7990		IC, TDA2616Q/N1	935040440112

7991		Transistor, NPN, BC847B(COL)	319801042030
7992		Transistor, NPN, BC847B(COL)	319801042030
7993		Transistor, NPN, BC847B(COL)	319801042030
7994		Transistor, NPN, BC847B(COL)	319801042030
		TOP CONTROL PANEL	
CBA	A	Top Control Panel Assy	313918806031
CBA	B	Top Control Panel Assy	313926710901
CBA	C	Top Control Panel Assy	313918887281
CBA	D	Top Control Panel Assy	314109710891
0052	A	Knob, Top Control	313913766921
0345	C	Connector, 3 Pin	242202509191
1010	ABD	Connector, 3 Pin	242202516601
1011	ABD	Switch, Tactile	242212802742
1012	ABD	Switch, Tactile	242212802742
1013	ABD	Switch, Tactile	242212802742
1014	ABD	Switch, Tactile	242212802742
1014	BD	TOP.CTRL.PNL-PV2-GL	313918804331
1014	A	TOP.CTRL.PNL-RND-GL	313918804781
1014	C	PNL-TOP.CTRL-FL13B-NA	313918889921
1701	C	Switch, Tactile	242212802742
1702	C	Switch, Tactile	242212802742
1703	C	Switch, Tactile	242212802742
1704	C	Switch, Tactile	242212802742
1705	C	Switch, Tactile	242212802742
3008	C	Res, 150 ohm, 5%, 1/10W, Metalized Glass	319802151510
3010	C	Res, 390 ohm, 5%, 1/10W, Metalized Glass	319802153910
3011	ABD	Res, 150 ohm, 5%, 1/16W, Metalized Glass	319802131510
3011	C	Res, 560 ohm, 5%, 1/10W, Metalized Glass	319802155610
3012	ABD	Res, 390 ohm, 5%, 1/16W, Metalized Glass	319802133910
3013	ABD	Res, 1K8, 1%, 1/16W, Metalized Glass	232270461802
3013	C	Res, 1K8, 5%, 1/10W, Metalized Glass	319802151820
3014	C	Res, 820 ohm, 5%, 1/10W, Metalized Glass	319802158210
3014	ABD	Res, Zero ohm, "Chip" Jumper	319802190030
3015	ABD	Res, 820 ohm, 1%, 1/16W, Metalized Glass	232270468201
3016	ABD	Res, Zero ohm, "Chip" Jumper	319802190030
8010	ABD	Cable HR 03P/1000/03P HR (INS)	313913101771
8345	C	Cable HR 03P/1000/03P HR (INS)	313913101771
9000	C	Res, Zero ohm, "Chip" Jumper	319802190020
9001	C	Res, Zero ohm, "Chip" Jumper	319802190020
9002	C	Res, Zero ohm, "Chip" Jumper	319802190020
		SIDE A/V PANEL	
CBA	ABD	Side A/V Panel Assy	313918887701
CBA	C	Side A/V Panel Assy	313918887271
1252		Connector, 7 Pin	242202511244

1254		Connector, 5 Pin	242202512481
1278	ABD	Connector, 4 Pin	242202512479
1278	C	Connector, 4P M 2.50	242202515847
1280	C	Connector, 3 Pin	241202000725
1281	C	Connector, 3P M 2.50	242202516382
2171		Cap, 330p, 10%, 50v, Ceramic	319801913310
2172		Cap, 330p, 10%, 50v, Ceramic	319801913310
2173		Cap, 330p, 10%, 50v, Ceramic	319801913310
2174		Cap, 330p, 10%, 50v, Ceramic	319801913310
2175		Cap, 2u2, 20%, 50v, Electrolytic	319802952280
2176		Cap, 100n, 10%, 16v, Ceramic	319801731040
2178		Cap, 470p, 10%, 50v, Ceramic	319801734710
2180		Cap, 2u2, 20%, 50v, Electrolytic	319802952280
3150		Res, 47K, 5%, 1/6W, Carbon Film	319801104730
3151		Res, 22K, 5%, 1/6W, Carbon Film	319801102230
3152		Res, 47K, 5%, 1/6W, Carbon Film	319801104730
3153		Res, 22K, 5%, 1/6W, Carbon Film	319801102230
3154		Res, 75 ohm, 5%, 1/6W, Carbon Film	319801107590
3155	ABD	Res, 75 ohm, 5%, 1/6W, Carbon Film	319801107590
3156		Res, 820 ohm, 5%, 1/6W, Carbon Film	319801108210
3157		Res, 820 ohm, 5%, 1/6W, Carbon Film	319801108210
3158		Res, 75 ohm, 5%, 1/6W, Carbon Film	319801107590
3159		Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3160		Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
4180	ABD	Res, Zero ohm, "Chip" Jumper	319802190020
		FRONT INTERFACE PANEL	
CBA	BD	Front Interface Panel Assy	313918806011
CBA	A	Front Interface Panel Assy	313918852711
CBA	C	Front Interface Panel Assy	313918887291
1109	C	SWI SIGN 2P 0.1A 30V	242212802909
1340	C	Connector, 5 Pin	242202510428
1351	C	Connector, 7 Pin	242202511244
1354	C	SOC CRT V 10P F	242250000004
1361	C	Connector, 3P M 2.50	242202516382
1381	C	Connector, 3 Pin	241202000725
1606	ABD	Switch, Tactile	242212802742
1693		Connector, 6 Pin	242202510738
2101	C	Cap, 220u, 20%, 25v, Electrolytic	319802532210
2102	C	Cap, 1u, 10%, 50v, Polyester	319801401050
2103	C	Cap, 100n, 10%, 50v, Polyester	319801401040
2313	C	Cap, 47u, 20%, 250v, Electrolytic	202001293786
2317	C	Cap, 4n7, 5%, 1600v, Polypropylene	222237590145
2319	C	Cap, 10n, +80/-20%, 50v, Ceramic	319801921030
2332	C	Cap, 4n7, 10%, 50v, Ceramic	319801734720
2333	C	Cap, 680p, 5%, 25v, Ceramic	319801636810

2335	C	Cap, 10p, 5%, 50v, Ceramic	319801631090
2336	C	Cap, 33n, 10%, 16v, Ceramic	319801733330
2337	C	Cap, 10p, 5%, 50v, Ceramic	319801631090
2338	C	Cap, 100n, 10%, 250v, Metalized Polyester	202231800109
2339	C	Cap, 100n, 10%, 250v, Metalized Polyester	202231800109
2340	C	Cap, 100n, 10%, 250v, Metalized Polyester	202231800109
2341	C	Cap, 10p, 5%, 50v, Ceramic	319801631090
2343	C	Cap, 680p, 5%, 25v, Ceramic	319801636810
2344	C	Cap, 4n7, 10%, 50v, Ceramic	319801734720
2346	C	Cap, 33n, 10%, 16v, Ceramic	319801733330
2347	C	Cap, 470u, 20%, 16v, Electrolytic	319802524710
2352	C	Cap, 4n7, 10%, 50v, Ceramic	319801734720
2353	C	Cap, 680p, 5%, 25v, Ceramic	319801636810
2356	C	Cap, 33n, 10%, 16v, Ceramic	319801733330
2357	C	Res, Zero ohm, "Chip" Jumper	319802190030
2361	C	Cap, 1n, 10%, 50v, Ceramic	319801731020
2363	C	Cap, 47u, 20%, 200v, Electrolytic	202001293486
2364	C	Cap, 470p, 10%, 50v, Ceramic	319801734710
2365	C	Cap, 470p, 10%, 50v, Ceramic	319801734710
2367	C	Cap, 100n, 10%, 16v, Ceramic	319801731040
2368	C	Cap, 100n, 10%, 100v, Metalized Polyester	222236585104
2369	C	Cap, 330p, 5%, 50v, Ceramic	319801633310
2370	C	Cap, 100n, 10%, 16v, Ceramic	319801731040
2381	C	Cap, 47n, 10%, 50v, Polyester	319801404730
2383	C	Cap, 220p, 5%, 200v, Ceramic	223893011541
2384	C	Cap, 100n, 10%, 16v, Ceramic	319801731040
2385	C	Cap, 100n, 10%, 16v, Ceramic	319801731040
2387	C	Cap, 10n, 10%, 50v, Ceramic	319801731030
2389	C	Cap, 100n, 10%, 16v, Ceramic	319801731040
2390	C	Cap, 10u, 20%, 16v, Electrolytic	319802821090
2391	C	Cap, 100n, 10%, 16v, Ceramic	319801731040
2392	C	Cap, 4n7, 10%, 50v, Ceramic	319801734720
2691	ABD	Cap, 220u, 20%, 25v, Electrolytic	319802532210
2692	BD	Cap, 1u, +80/-20%, 10v, Ceramic	319801741050
2698	ABD	Cap, 100n, 10%, 50v, Polyester	319801401040
3111	C	Res, 1K2, 5%, 1/6W, Carbon Film	319801101220
3112	C	Res, 220 ohm, 5%, 1/6W, Carbon Film	319801102210
3113	C	Res, 4K7, 5%, 1/6W, Carbon Film	319801104720
3114	C	Res, 150K, 5%, 1/6W, Carbon Film	319801101540
3305	C	Res, 1 ohm, 5%, 1/3W, Metal Film	230620403108
3309	C	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319802132210
3310	C	Res, 22 ohm, 5%, 1/16W, Metalized Glass	319802132290
3311	C	Res, 22 ohm, 5%, 1/16W, Metalized Glass	319802132290
3317	C	Res, 1K, 5%, 1/6W, Carbon Film	319801101020
3325	C	Res, 1K8, 5%, 1/16W, Metalized Glass	319802131820
3331	C	Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010

3332	C	Res, 1K, 20%, 1/2W, Carbon Film	319801301020
3333	C	Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3334	C	Res, 1K, 20%, 1/2W, Carbon Film	319801301020
3335	C	Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3336	C	Res, 1K, 20%, 1/2W, Carbon Film	319801301020
3337	C	Res, 120K, 5%, 1/4W, Carbon Film	212210102074
3338	C	Res, 2K2, 5%, 1/16W, Metalized Glass	319802132220
3339	C	Res, 2K7, 5%, 1/16W, Metalized Glass	319802132720
3340	C	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3341	C	Res, 120K, 5%, 1/4W, Carbon Film	212210102074
3342	C	Res, 2K7, 5%, 1/16W, Metalized Glass	319802132720
3343	C	Res, 2K2, 5%, 1/16W, Metalized Glass	319802132220
3344	C	Res, 1K, 5%, 1/6W, Carbon Film	319801101020
3345	C	Res, 33 ohm, 1%, 3/5W, Metal Film	231291513309
3347	C	Res, 1K5, 20%, 1/2W, Carbon Film	319801301520
3350	C	Res, 6K8, 5%, 1/6W, Carbon Film	319801106820
3351	C	Res, 150 ohm, 5%, 1/2W, Metal Film	230620703151
3352	C	Res, 120K, 5%, 1/4W, Carbon Film	212210102074
3353	C	Res, 2K2, 5%, 1/16W, Metalized Glass	319802132220
3354	C	Res, 2K7, 5%, 1/16W, Metalized Glass	319802132720
3355	C	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3357	C	VDR 0603 1MA/18V MAX 35V	212255200004
3361	C	Res, 680 ohm, 5%, 1/16W, Metalized Glass	319802136810
3362	C	Res, 10 ohm, 5%, 1/3W, Metal Film	230620403109
3363	C	Res, 560 ohm, 5%, 1/16W, Metalized Glass	319802135610
3364	C	Res, 1R5, 5%, 1/8W, Metalized Glass	232273061158
3365	C	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3366	C	Res, 120K, 5%, 1/16W, Metalized Glass	232270260124
3367	C	Res, 120K, 5%, 1/4W, Carbon Film	212210102074
3368	C	Res, 560 ohm, 5%, 1/16W, Metalized Glass	319802135610
3369	C	Res, 150K, 5%, 1/16W, Metalized Glass	319802131540
3370	C	Res, 1R5, 5%, 1/8W, Metalized Glass	232273061158
3371	C	Res, 560 ohm, 5%, 1/6W, Carbon Film	319801105610
3372	C	Res, 150K, 5%, 1/16W, Metalized Glass	319802131540
3373	C	Res, 1K5, 5%, 5W, Metal Film	232225741152
3374	C	Res, 10 ohm, 5%, 1/3W, Metal Film	232220533109
3377	C	Res, 1K8, 5%, 1/16W, Metalized Glass	319802131820
3378	C	Res, 68 ohm, 5%, 1/16W, Metalized Glass	319802136890
3379	C	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3380	C	Res, 33K, 5%, 1/16W, Metalized Glass	319802133330
3381	C	Res, 18K, 5%, 1/16W, Metalized Glass	319802131830
3382	C	Res, 8K2, 5%, 1/16W, Metalized Glass	319802138220
3383	C	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3384	C	Res, 330K, 5%, 1/16W, Metalized Glass	319802133340
3385	C	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3392	C	Res, 270 ohm, 5%, 1/16W, Metalized Glass	319802132710

3393	C	Res, 56ohm, 1%, Metal Film	319803956090
3394	C	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3396	C	Res, 1K8, 5%, 1/16W, Metalized Glass	319802131820
3398	C	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3691	ABD	Res, 1K2, 5%, 1/6W, Carbon Film	319801101220
3693	ABD	Res, 220 ohm, 5%, 1/6W, Carbon Film	319801102210
3694	ABD	Res, 4K7, 5%, 1/6W, Carbon Film	319801104720
3696	BD	Res, 150K, 5%, 1/16W, Metalized Glass	319802131540
3999	C	Res, 1K2, 5%, 1/16W, Metalized Glass	319802131220
4321	C	Res, Zero ohm, "Chip" Jumper	319802190030
4601	BD	Res, Zero ohm, "Chip" Jumper	319802190030
5303	C	Coil, 5u6	319801815680
5304	C	Fixed, Inductor, 100MHz, 50R	319801890010
5308	C	Coil, 5u6	319801815680
5324	C	Fixed, Inductor, 100MHz, 50R	319801890010
5361	C	Fixed, Inductor, 100MHz, 80 ohm	319801890020
5362	C	Coil, 1u	319801831080
6101	C	LED	932218569682
6102	C	IR Receiver	932220678667
6103	C	OPT SEN LTR-301	932219736682
6307	C	Zener Diode, 6.8 volt	319802056880
6325	C	Zener Diode, 2.7 volt	319801022780
6331	C	Diode, BAV21WS	932219745703
6332	C	Diode, BAV21WS	932219745703
6333	C	Diode, BAV21WS	932219745703
6334	C	Zener Diode, 3.3 volt	319802053380
6362	C	Diode, Signal, BAS316	319801010630
6691	ABD	LED	932218569682
6692	ABD	IR Receiver	932220678667
6693	BD	OPT SEN LTR-301	932219736682
7330	C	IC, TDA6111Q/N4	935173950112
7331	C	Transistor, NPN, BC847B(COL)	319801042030
7332	C	Transistor, PNP, BC327	933179540126
7333	C	Transistor, NPN, BC337	933179600126
7340	C	IC, TDA6111Q/N4	935173950112
7350	C	IC, TDA6111Q/N4	935173950112
7361	C	Transistor, NPN, BF840	933792670215
7362	C	Transistor, PNP, BF824	933722350215
7363	C	Transistor, KTB631KY	932219505687
7364	C	Transistor, KTD600KY	932219514687
7365	C	Transistor, NPN, BF840	933792670215
7366	C	IC, TDA8941P/N1	935262851112
8157	A	Cable HR 06P/340/06P HR 26OS BK	313911038941
8157	BD	Cable EHR 6P/340/6P DBL INS-BLU	313913103451
8278	A	HR BK 4P/1000+340/2X2FAST	313913101262
8693	C	Cable HR 6P/400/6P HR INS	313913105981

	BC	**HDMI PANEL**	
CBA	B	HDMI Panel Assy	313918885191
CBA	C	HDMI Panel Assy	313926713561
1020	B	PNL-FH-HDMI-4:3-GL	313918885211
1020	C	PNL-FH-HDMI-16:9-GL	313926713571
1021	BC	SOC HDMI H 19P F SM	242203300505
1220	BC	Connector, 7P M 2.00 SM	242202518742
1221	BC	Connector, 6P M 2.00 SM	242202518741
1222	BC	Connector, 6P M 2.00 SM	242202518741
1223	BC	Connector, 4P M 2.00 SM	242202518779
2003	BC	Cap, 10u, 10%, 16v, Ceramic	202055296675
2004	BC	Cap, 10u, 10%, 16v, Ceramic	202055296675
2008	BC	Cap, 10n, 10%, 50v, Ceramic	319801731030
2009	BC	Cap, 47u, 20%, 6.3v, Electrolytic	319803024790
2010	BC	Cap, 100n, 10%, 16v, Ceramic	319801731040
2011	BC	Cap, 47u, 20%, 6.3v, Electrolytic	319803024790
2012	BC	Cap, 100n, 10%, 16v, Ceramic	319801731040
2013	BC	Cap, 1u, 10%, 10v, Ceramic	202055296372
2014	BC	Cap, 10n, 10%, 50v, Ceramic	319801731030
2015	BC	Cap, 100n, 10%, 16v, Ceramic	319801731040
2016	BC	Cap, 47u, 20%, 6.3v, Electrolytic	319803024790
2017	BC	Cap, 33p, 5%, 50v, Ceramic	319801633390
2018	BC	Cap, 33p, 5%, 50v, Ceramic	319801633390
2019	BC	Cap, 33p, 5%, 50v, Ceramic	319801633390
2020	BC	Cap, 33p, 5%, 50v, Ceramic	319801633390
2021	BC	Cap, 33p, 5%, 50v, Ceramic	319801633390
2022	BC	Cap, 33p, 5%, 50v, Ceramic	319801633390
2023	BC	Cap, 10u, 10%, 16v, Ceramic	202055296675
2025	BC	Cap, 1u, 10%, 10v, Ceramic	202055296372
2026	BC	Cap, 47n, 10%, 16v, Ceramic	319801734730
2027	BC	Cap, 10n, 10%, 50v, Ceramic	319801731030
2028	BC	Cap, 10u, 10%, 16v, Ceramic	202055296675
2030	BC	Cap, 100n, 10%, 16v, Ceramic	319801731040
2031	BC	Cap, 47u, 20%, 6.3v, Electrolytic	319803024790
2032	BC	Cap, 100n, 10%, 16v, Ceramic	319801731040
2033	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2034	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2035	BC	Cap, 100n, 10%, 16v, Ceramic	319801731040
2036	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2037	BC	Cap, 47u, 20%, 6.3v, Electrolytic	319803024790
2039	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2040	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2041	BC	Cap, 100n, 10%, 16v, Ceramic	319801731040
2042	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2043	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020

2044	BC	Cap, 47u, 20%, 6.3v, Electrolytic	319803024790
2045	BC	Cap, 100n, 10%, 16v, Ceramic	319801731040
2046	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2047	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2048	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2049	BC	Cap, 47u, 20%, 6.3v, Electrolytic	319803024790
2050	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2051	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2052	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2053	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2054	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2055	BC	Cap, 100n, 10%, 16v, Ceramic	319801731040
2057	BC	Cap, 100n, 10%, 16v, Ceramic	319801731040
2059	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2060	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2061	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2069	BC	Cap, 1n, 5%, 25v, Ceramic	319801631020
2070	BC	Cap, 47u, 20%, 6.3v, Electrolytic	319803024790
2071	BC	Cap, 100n, 10%, 16v, Ceramic	319801731040
3005	BC	Res, 33 ohm, 5%, 1/16W, Metalized Glass	319802133390
3007	BC	Res, Network, 4X 33 ohm, 5%	319803113390
3008	BC	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3009	BC	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3010	BC	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3011	BC	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3012	BC	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3013	BC	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319802137590
3014	BC	Res, 3K9, 5%, 1/16W, Metalized Glass	319802133920
3015	BC	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3016	BC	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3017	BC	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3018	BC	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3019	BC	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3020	BC	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3026	BC	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3027	BC	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3030	BC	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3033	BC	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3034	BC	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3035	BC	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3036	BC	Res, 390 ohm, 5%, 1/16W, Metalized Glass	319802133910
3037	BC	Res, 91 ohm, 1%, 1/16W, Metalized Glass	232270469109
3040	BC	Res, 1 ohm, 5%, 1/16W, Metalized Glass	319802131080
3041	BC	Res, 1 ohm, 5%, 1/16W, Metalized Glass	319802131080
3042	BC	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3043	BC	Res, 220K, 5%, 1/16W, Metalized Glass	319802132240

3044	BC	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3045	BC	Res, 220K, 5%, 1/16W, Metalized Glass	319802132240
3080	B	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319802131010
3080	C	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
4002	BC	Res, Zero ohm, "Chip" Jumper	319802190030
4080	BC	Res, Zero ohm, "Chip" Jumper	319802190030
4081	BC	Res, Zero ohm, "Chip" Jumper	319802190030
5004	BC	Coil, 1u5	319801831580
5005	BC	Coil, 1u5	319801831580
5006	BC	Coil, 1u5	319801831580
5008	BC	Inductor, Fixed, 100MHz, 30 ohm	319801890060
5009	BC	Inductor, Fixed, 100MHz, 30 ohm	319801890060
5010	BC	Inductor, Fixed, 100MHz, 30 ohm	319801890060
5011	BC	Inductor, Fixed, 100MHz, 30 ohm	319801890060
5012	BC	Inductor, Fixed, 100MHz, 30 ohm	319801890060
5013	BC	Inductor, Fixed, 100MHz, 30 ohm	319801890060
5031	BC	Inductor, Fixed, 100MHz, 30 ohm	319801890060
5049	BC	Inductor, Fixed, 100MHz, 30 ohm	319801890060
7002	BC	IC, SM SII9993CTG100	932219935671
7003	BC	IC, SM M24C02-WMN6P	932220624668
7006	BC	Transistor, FET, BSN20	934012500215
7007	BC	Transistor, FET, BSN20	934012500215
7011	BC	IC, SM UDA1334BT/N2	935270394118
		TRIDENT PANEL	
CBA	AD	Trident Panel Assy	313918884161
CBA	BC	Trident Panel Assy	313918887651
1202		Connector, 5P M 2.00 SM	242202518739
1206		Connector, 4P M 2.00 SM	242202518751
1210		Crystal Resonator 14M318 20P AT-41C R	242254301374
1211		Crystal Resonator, 12Mhz, 20P,	242254301095
1212		Crystal Resonator, 12Mhz, 20P,	242254301095
1220	BC	Connector, 7P M 2.00 SM	242202518742
1221	BC	Connector, 6P M 2.00 SM	242202518753
1222	BC	Connector, 6P M 2.00 SM	242202518741
1223	BC	Connector, 4P M 2.00 SM	242202518779
1228		Connector, 6P M 2.00 SM	242202518753
1250		Connector, 12P M 2.50	242202516219
1251		Connector, 10P M 2.50	242202518582
1533		Connector, 12P M 2.00 SM	242202518746
2201		Cap, 100u, 20%, 16v, Electrolytic	319803041010
2202		Cap, 100n, 10%, 16v, Ceramic	319801731040
2203		Cap, 100u, 20%, 16v, Electrolytic	319803041010
2204		Cap, 100n, 10%, 16v, Ceramic	319801731040
2205		Cap, 1n, 50V, Ceramic	319803501020
2206		Cap, 100u, 20%, 16v, Electrolytic	319803041010

2207	Cap, 100u, 20%, 16v, Electrolytic	319803041010
2208	Cap, 100n, 10%, 16v, Ceramic	319801731040
2209	Cap, 100u, 20%, 16v, Electrolytic	319803041010
2210	Cap, 100n, 10%, 16v, Ceramic	319801731040
2211	Cap, 100u, 20%, 16v, Electrolytic	319803041010
2212	Cap, 100u, 20%, 16v, Electrolytic	319803041010
2213	Cap, 100n, 10%, 16v, Ceramic	319801731040
2214	Cap, 47u, 20%, 16v, Electrolytic	319803044790
2215	Cap, 47u, 20%, 16v, Electrolytic	319803044790
2216	Cap, 47u, 20%, 16v, Electrolytic	319803044790
2217	Cap, 100n, 10%, 16v, Ceramic	319801731040
2218	Cap, 100n, 10%, 16v, Ceramic	319801731040
2219	Cap, 100n, 10%, 16v, Ceramic	319801731040
2220	Cap, 100n, 10%, 16v, Ceramic	319801731040
2221	Cap, 100n, 10%, 16v, Ceramic	319801731040
2222	Cap, 100n, 10%, 16v, Ceramic	319801731040
2223	Cap, 100n, 10%, 16v, Ceramic	319801731040
2224	Cap, 100n, 10%, 16v, Ceramic	319801731040
2225	Cap, 100n, 10%, 16v, Ceramic	319801731040
2226	Cap, 100n, 10%, 16v, Ceramic	319801731040
2227	Cap, 100n, 10%, 16v, Ceramic	319801731040
2228	Cap, 100n, 10%, 16v, Ceramic	319801731040
2229	Cap, 100n, 10%, 16v, Ceramic	319801731040
2230	Cap, 100n, 10%, 16v, Ceramic	319801731040
2231	Cap, 100n, 10%, 16v, Ceramic	319801731040
2232	Cap, 10u, 20%, 16v, Electrolytic	319803041090
2233	Cap, 100n, 10%, 16v, Ceramic	319801731040
2234	Cap, 100n, 10%, 16v, Ceramic	319801731040
2235	Cap, 10u, 20%, 16v, Electrolytic	319803041090
2236	Cap, 10u, 20%, 16v, Electrolytic	319803041090
2237	Cap, 100n, 10%, 16v, Ceramic	319801731040
2238	Cap, 100n, 10%, 16v, Ceramic	319801731040
2239	Cap, 100n, 10%, 16v, Ceramic	319801731040
2240	Cap, 27p, 50V, Ceramic	319803402790
2241	Cap, 1u, d0%, 6V3, Ceramic	202055296834
2242	Cap, 68p, 50V, Ceramic	319803406890
2243	Cap, 68p, 50V, Ceramic	319803406890
2244	Cap, 22p, 5%, 50v, Ceramic	319801632290
2245	Cap, 22p, 5%, 50v, Ceramic	319801632290
2246	Cap, 4n7, 25V Ceramic	319803514720
2247	Cap, 4n7, 25V Ceramic	319803514720
2248	Cap, 47u, 20%, 16v, Electrolytic	319803044790
2249	Cap, 330p, 50V Ceramic	319803503310
2250	Cap, 47u, 20%, 16v, Electrolytic	319803044790
2251	Cap, 100n, 10%, 16v, Ceramic	319801731040
2252	Cap, 10u, 20%, 16v, Electrolytic	319803041090

2253		Cap, 330p, 50V Ceramic	319803503310
2254		Cap, 10u, 20%, 16v, Electrolytic	319803041090
2255		Cap, 330p, 50V Ceramic	319803503310
2256		Cap, 100n, 10%, 16v, Ceramic	319801731040
2257		Cap, 100p, 50V Ceramic	319803401010
2258		Cap, 100p, 50V Ceramic	319803401010
2259		Cap, 100n, 10%, 16v, Ceramic	319801731040
2260		Cap, 100p, 50V Ceramic	319803401010
2261		Cap, 220uF, 20%, 16V Electrolytic	202001200001
2262		Cap, 22u, 20%, 16v, Electrolytic	319803042290
2263		Cap, 22u, 20%, 16v, Electrolytic	319803042290
2265		Cap, 1u, d0%, 6V3, Ceramic	202055296834
2266		Cap, 1u, d0%, 6V3, Ceramic	202055296834
2267		Cap, 10u, 20%, 16v, Electrolytic	319803041090
2268		Cap, 100n, 10%, 16v, Ceramic	319801731040
2270	BC	Cap, 47u, 20%, 16v, Electrolytic	319803044790
2271	BC	Cap, 10n, 16V Ceramic	319803521030
2272	BC	Cap, 47u, 20%, 4v, Electrolytic	319803014790
2273	BC	Cap, 47u, 20%, 4v, Electrolytic	319803014790
2274	BC	Cap, 47u, 20%, 4v, Electrolytic	319803014790
2275	BC	Cap, 47u, 20%, 4v, Electrolytic	319803014790
2276	BC	Cap, 47u, 20%, 4v, Electrolytic	319803014790
2277	BC	Cap, 47u, 20%, 4v, Electrolytic	319803014790
2278		Cap, 100n, 10%, 16v, Ceramic	319801731040
2279		Cap, 100n, 10%, 16v, Ceramic	319801731040
2280		Cap, 100n, 10%, 16v, Ceramic	319801731040
2281		Cap, 56p, 50V Ceramic	319803405690
2282		Cap, 56p, 50V Ceramic	319803405690
2283		Cap, 10u, 20%, 16v, Electrolytic	319803041090
2284		Cap, 47u, 20%, 16v, Electrolytic	319803044790
2285		Cap, 100n, 10%, 16v, Ceramic	319801731040
2286		Cap, 1u, d0%, 6V3, Ceramic	202055296834
2287		Cap, 100n, 10%, 16v, Ceramic	319801731040
2601		Cap, 100n, 10%, 16v, Ceramic	319801731040
2602		Cap, 22u, 20%, 16v, Electrolytic	319803042290
2603		Cap, 22u, 20%, 16v, Electrolytic	319803042290
2604		Cap, 100n, 10%, 16v, Ceramic	319801731040
2605		Cap, 22u, 20%, 16v, Electrolytic	319803042290
2606		Cap, 100n, 10%, 16v, Ceramic	319801731040
2607		Cap, 22u, 20%, 16v, Electrolytic	319803042290
2608		Cap, 100n, 10%, 16v, Ceramic	319801731040
2609		Cap, 100n, 10%, 16v, Ceramic	319801731040
2610		Cap, 100n, 10%, 16v, Ceramic	319801731040
2611		Cap, 100n, 10%, 16v, Ceramic	319801731040
2612		Cap, 100n, 10%, 16v, Ceramic	319801731040
2613		Cap, 100n, 10%, 16v, Ceramic	319801731040

2614	Cap, 100n, 10%, 16v, Ceramic	319801731040
2615	Cap, 100n, 10%, 16v, Ceramic	319801731040
2616	Cap, 100n, 10%, 16v, Ceramic	319801731040
2617	Cap, 100n, 10%, 16v, Ceramic	319801731040
2618	Cap, 100n, 10%, 16v, Ceramic	319801731040
2619	Cap, 100n, 10%, 16v, Ceramic	319801731040
2620	Cap, 100n, 10%, 16v, Ceramic	319801731040
2621	Cap, 100n, 10%, 16v, Ceramic	319801731040
2622	Cap, 100n, 10%, 16v, Ceramic	319801731040
2623	Cap, 100n, 10%, 16v, Ceramic	319801731040
2624	Cap, 100n, 10%, 16v, Ceramic	319801731040
2625	Cap, 47n, 16V Ceramic	319803574730
2626	Cap, 47n, 16V Ceramic	319803574730
2627	Cap, 1n, 50V, Ceramic	319803501020
2628	Cap, 47n, 16V Ceramic	319803574730
2629	Cap, 100n, 10%, 16v, Ceramic	319801731040
2632	Cap, 82n, 16V, 10%, Ceramic	223878655648
2633	Cap, 8n2, 10%, 50v, Ceramic	223858615635
2634	Cap, 100n, 10%, 16v, Ceramic	319801731040
2635	Cap, 100p, 50V Ceramic	319803401010
2636	Cap, 100p, 50V Ceramic	319803401010
2637	Cap, 10p, 50V Ceramic	319803401090
2638	Cap, 10u, 10%, 16v, Ceramic	202055296675
2639	Cap, 10u, 20%, 16v, Electrolytic	319803041090
2640	Cap, 10p, 50V Ceramic	319803401090
2641	Cap, 10p, 50V Ceramic	319803401090
2642	Cap, 10p, 50V Ceramic	319803401090
2643	Cap, 10p, 50V Ceramic	319803401090
2644	Cap, 10p, 50V Ceramic	319803401090
2645	Cap, 22u, 20%, 16v, Electrolytic	319803042290
2646	Cap, 100n, 10%, 16v, Ceramic	319801731040
2647	Cap, 100n, 10%, 16v, Ceramic	319801731040
2648	Cap, 100n, 10%, 16v, Ceramic	319801731040
2649	Cap, 100n, 10%, 16v, Ceramic	319801731040
2650	Cap, 100n, 10%, 16v, Ceramic	319801731040
2651	Cap, 100n, 10%, 16v, Ceramic	319801731040
2652	Cap, 1n, 50V, Ceramic	319803501020
2653	Cap, 1n, 50V, Ceramic	319803501020
2654	Cap, 1n, 50V, Ceramic	319803501020
2655	Cap, 1n, 50V, Ceramic	319803501020
2656	Cap, 1n, 50V, Ceramic	319803501020
2657	Cap, 1n, 50V, Ceramic	319803501020
2658	Cap, 1n, 50V, Ceramic	319803501020
2659	Cap, 1n, 50V, Ceramic	319803501020
2660	Cap, 1n, 50V, Ceramic	319803501020
2661	Cap, 1n, 50V, Ceramic	319803501020

2662	Cap, 1n, 50V, Ceramic	319803501020
2663	Cap, 1n, 50V, Ceramic	319803501020
2664	Cap, 100n, 10%, 16v, Ceramic	319801731040
2665	Cap, 100n, 10%, 16v, Ceramic	319801731040
2666	Cap, 100n, 10%, 16v, Ceramic	319801731040
2667	Cap, 100n, 10%, 16v, Ceramic	319801731040
2668	Cap, 100n, 10%, 16v, Ceramic	319801731040
2669	Cap, 100n, 10%, 16v, Ceramic	319801731040
2670	Cap, 47u, 20%, 16v, Electrolytic	319803044790
2671	Cap, 100n, 10%, 16v, Ceramic	319801731040
2672	Cap, 47u, 20%, 16v, Electrolytic	319803044790
2673	Cap, 100n, 10%, 16v, Ceramic	319801731040
2674	Cap, 47u, 20%, 16v, Electrolytic	319803044790
2675	Cap, 100n, 10%, 16v, Ceramic	319801731040
2677	Cap, 100n, 10%, 16v, Ceramic	319801731040
2678	Cap, 100n, 10%, 16v, Ceramic	319801731040
2679	Cap, 100n, 10%, 16v, Ceramic	319801731040
2681	Cap, 10p, 50V Ceramic	319803401090
2682	Cap, 100p, 50V Ceramic	319803401010
2683	Cap, 100p, 50V Ceramic	319803401010
2684	Cap, 1u, 10%, 10V Ceramic	202055296807
2685	Cap, 4u7, 20%, 35v, Electrolytic	319803074780
2686	Cap. 470p, 50V Ceramic	319803504710
2687	Cap, 27p, 50V, Ceramic	319803402790
2688	Cap, 27p, 50V, Ceramic	319803402790
2689	Cap, 100n, 10%, 16v, Ceramic	319801731040
2690	Cap, 100n, 10%, 16v, Ceramic	319801731040
2691	Cap, 100n, 5%, 16V, Polypropyl	202031990005
2692	Cap, 100n, 10%, 16v, Ceramic	319801731040
2693	Cap, 10p, 50V Ceramic	319803401090
2694	Cap, 100n, 10%, 16v, Ceramic	319801731040
2695	Cap, 1n, 50V, Ceramic	319803501020
2696	Cap, 1n, 50V, Ceramic	319803501020
2697	Cap, 47n, 16V Ceramic	319803574730
2700	Cap, 100n, 10%, 16v, Ceramic	319801731040
2701	Cap, 100n, 10%, 16v, Ceramic	319801731040
2702	Cap, 100n, 10%, 16v, Ceramic	319801731040
2703	Cap, 10n, +80/-20%, 50v, Ceramic	319801741030
3201	Res, 4K7, 5%, 1/16W, Metalized Glass	319803104720
3202	Res, 10K, 5%, 1/16W, Metalized Glass	319803101030
3203	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319803102210
3204	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319803102210
3205	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319803102210
3206	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319803102210
3207	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319803102210
3208	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319803102210

3209		Res, 220 ohm, 5%, 1/16W, Metalized Glass	319803102210
3210		Res, 10 ohm, 5%, 1/16W, Metalized Glass	319803101090
3211		Res, 10 ohm, 5%, 1/16W, Metalized Glass	319803101090
3213		Res, 10 ohm, 5%, 1/16W, Metalized Glass	319803101090
3215		Res, 10 ohm, 5%, 1/16W, Metalized Glass	319803101090
3218		Res, 5K1, 1%, 1/16W, Metalized Glass	232270465102
3219		Res, 5K1, 1%, 1/16W, Metalized Glass	232270465102
3221		Res, 560 ohm, 5%, 1/16W, Metalized Glass	319803105610
3222		Res, 10K, 5%, 1/16W, Metalized Glass	319803101030
3223		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3224		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3225		Res, 1K, 5%, 1/16W, Metalized Glass	319803101020
3226		Res, 3K9, 5%, 1/16W, Metalized Glass	319803103920
3227		Res, 150 ohm, 5%, 1/16W, Metalized Glass	319803101510
3228		Res, 220 ohm, 5%, 1/16W, Metalized Glass	319803102210
3229		Res, 180 ohm, 5%, 1/16W, Metalized Glass	319803101810
3230		Res, 75 ohm, 5%, 1/16W, Metalized Glass	319803107590
3231	AD	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3232		Res, 220 ohm, 5%, 1/16W, Metalized Glass	319803102210
3233		Res, 4K7, 5%, 1/16W, Metalized Glass	319803104720
3234		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3238	BC	Res, 1K, 5%, 1/16W, Metalized Glass	319803101020
3239	BC	Res, 10 ohm, 5%, 1/16W, Metalized Glass	319803101090
3240		Res, 24K, 1%, 1/16W, Metalized Glass	232270462403
3241		Res, 150 ohm, 5%, 1/16W, Metalized Glass	319803101510
3242		Res, 150 ohm, 5%, 1/16W, Metalized Glass	319803101510
3243		Res, 150 ohm, 5%, 1/16W, Metalized Glass	319803101510
3244		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3245		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3246		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3248		Res, Network, 4X 4K7, 5%	319803114720
3252		Res, 4K7, 5%, 1/16W, Metalized Glass	319803104720
3254		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3256		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3257		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3258		Res, 470 ohm, 5%, 1/16W, Metalized Glass	319803104710
3259		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3260		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3262		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3264		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3266		Res, 2K7, 5%, 1/16W, Metalized Glass	319803102720
3268		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3270		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3271		Res, 22 ohm, 5%, 1/16W, Metalized Glass	319803102290
3272		Res, 22 ohm, 5%, 1/16W, Metalized Glass	319803102290
3273		Res, 22 ohm, 5%, 1/16W, Metalized Glass	319803102290

3274	Res, Network, 4X 22 ohm, 5%	319803112290
3275	Res, Network, 4X 22 ohm, 5%	319803112290
3276	Res, Network, 4X 22 ohm, 5%	319803112290
3277	Res, Network, 4X 22 ohm, 5%	319803112290
3278	Res, Network, 4X 22 ohm, 5%	319803112290
3279	Res, Network, 4X 22 ohm, 5%	319803112290
3285	Res, 33 ohm, 5%, 1/16W, Metalized Glass	319803103390
3286	Res, 33 ohm, 5%, 1/16W, Metalized Glass	319803103390
3287	Res, 33 ohm, 5%, 1/16W, Metalized Glass	319803103390
3288	Res, 33 ohm, 5%, 1/16W, Metalized Glass	319803103390
3289	Res, 33 ohm, 5%, 1/16W, Metalized Glass	319803103390
3290	Res, 4K7, 5%, 1/16W, Metalized Glass	319803104720
3292	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319803102210
3295	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319803102210
3298	Res, 10 ohm, 5%, 1/10W, Metalized Glass	319802151090
3299	Res, 22 ohm, 5%, 1/10W, Metalized Glass	319802152290
3603	Res, 10 ohm, 5%, 1/16W, Metalized Glass	319803101090
3604	Res, 10 ohm, 5%, 1/16W, Metalized Glass	319803101090
3605	Res, 10 ohm, 5%, 1/16W, Metalized Glass	319803101090
3606	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3607	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3608	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3609	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319803107590
3610	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319803107590
3611	Res, 75 ohm, 5%, 1/16W, Metalized Glass	319803107590
3612	Res, 1K5, 5%, 1/16W, Metalized Glass	319803101520
3613	Res, 560 ohm, 5%, 1/16W, Metalized Glass	319803105610
3614	Res, 470 ohm, 5%, 1/16W, Metalized Glass	319803104710
3615	Res, 470 ohm, 5%, 1/16W, Metalized Glass	319803104710
3616	Res, 10K, 5%, 1/16W, Metalized Glass	319803101030
3617	Res, 22K, 5%, 1/16W, Metalized Glass	319803102230
3618	Res, 33K, 5%, 1/16W, Metalized Glass	319803103330
3619	Res, 82K, 5%, 1/16W, Metalized Glass	319803108230
3620	Res, 330K, 5%, 1/16W, Metalized Glass	319803103340
3621	Res, 2K2, 5%, 1/16W, Metalized Glass	319803102220
3622	Res, 12K, 5%, 1/16W, Metalized Glass	319803101230
3623	Res, 1K, 5%, 1/16W, Metalized Glass	319803101020
3624	Res, 270K, 5%, 1/16W, Metalized Glass	232270260274
3625	Res, 39K, 5%, 1/16W, Metalized Glass	319803103930
3626	Res, 20K, 1%, 1/16W, Metalized Glass	232270462003
3628	Res, 4K7, 5%, 1/16W, Metalized Glass	319803104720
3629	Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3630	Res, 10 ohm, 5%, 1/16W, Metalized Glass	319803101090
3631	Res, 10K, 5%, 1/16W, Metalized Glass	319803101030
3632	Res, 560K, 1%, 1/16W, Metalized Glass	232270465604
3633	Res, 39K, 5%, 1/16W, Metalized Glass	319803103930

3634		Res, 100K, 5%, 1/16W, Metalized Glass	319803101040
3635		Res, 1K5, 5%, 1/16W, Metalized Glass	319803101520
3636		Res, 33K, 5%, 1/16W, Metalized Glass	319803103330
3637		Res, 100K, 5%, 1/16W, Metalized Glass	319803101040
3638		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3639		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3640		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3643		Res, 1K, 5%, 1/16W, Metalized Glass	319803101020
3644		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3645		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3646		Res, 100 ohm, 5%, 1/16W, Metalized Glass	319803101010
3648		Res, 2K2, 5%, 1/16W, Metalized Glass	319803102220
3649		Res, 2K2, 5%, 1/16W, Metalized Glass	319803102220
3650		Res, 220K, 5%, 1/16W, Metalized Glass	319803102240
3651		Res, 330K, 5%, 1/16W, Metalized Glass	319803103340
3652		Res, 2K2, 5%, 1/16W, Metalized Glass	319803102220
3653		Res, 4K7, 5%, 1/16W, Metalized Glass	319803104720
3654		Res, 4K7, 5%, 1/16W, Metalized Glass	319803104720
3655		Res, 3K3, 5%, 1/16W, Metalized Glass	319803103320
3656		Res, 1K5, 5%, 1/16W, Metalized Glass	319803101520
4203		Res, Zero ohm, "Chip" Jumper	319803190010
4204		Res, Zero ohm, "Chip" Jumper	319803190010
4205		Res, Zero ohm, "Chip" Jumper	319803190010
4206		Res, Zero ohm, "Chip" Jumper	319803190010
4207		Res, Zero ohm, "Chip" Jumper	319803190010
4208	BC	Res, Zero ohm, "Chip" Jumper	319803190010
4209		Res, Zero ohm, "Chip" Jumper	319803190010
4210		Res, Zero ohm, "Chip" Jumper	319803190010
4211		Res, Zero ohm, "Chip" Jumper	319803190010
4212		Res, Zero ohm, "Chip" Jumper	319803190010
4213		Res, Zero ohm, "Chip" Jumper	319803190010
4214		Res, Zero ohm, "Chip" Jumper	319803190010
4215		Res, Zero ohm, "Chip" Jumper	319803190010
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4217		Res, Zero ohm, "Chip" Jumper	319802190030
4218		Res, Zero ohm, "Chip" Jumper	319802190030
4221		Res, Zero ohm, "Chip" Jumper	319802190030
4223	AD	Res, Zero ohm, "Chip" Jumper	319803190010
4225	AD	Res, Zero ohm, "Chip" Jumper	319803190010
4228		Res, Zero ohm, "Chip" Jumper	319803190010
4250		Res, Zero ohm, "Chip" Jumper	319803190010
5201		Inductor, Fixed, 100MHZ, 220 ohm	242254944197
5202		Inductor, Fixed, 100MHZ, 220 ohm	242254944197
5203		Inductor, Fixed, 100MHZ, 220 ohm	242254944197
5204		Inductor, Fixed, 100MHZ, 220 ohm	242254944197
5206		Inductor, Fixed, 100MHZ, 220 ohm	242254944197

5210		Inductor, Fixed, 100MHZ, 220 ohm	242254944197
5215		Inductor, Fixed, 100MHZ, 220 ohm	242254944197
5216		Inductor, Fixed, 100MHZ, 220 ohm	242254944197
5217		Inductor, Fixed, 100MHZ, 220 ohm	242254944197
6200		Diode, Rect, SM SS34	932208282668
6201		Diode, Rect, SM SS34	932208282668
6222		Zener Diode, 8.2 volt	319802058280
6223		Diode, Signal, BAS316	319801010630
6224		Zener Diode, 4.7 volt	319802054780
6225		Diode, Signal, BAS316	319801010630
6226		Diode, Signal, BAV99	319801010620
6227		Zener Diode, 12 volt	319802051290
6228		Zener Diode, 33 volt	319802053390
6229		Diode, Signal, BAS316	319801010630
6230		Diode, Signal, BAS316	319801010630
6231		Diode, Signal, BAS316	319801010630
7201		IC, SM DPTVSVP	932220905671
7202		Transistor, PNP, BC857B(COL)	319801042150
7205	BC	IC, SM BA7657F	932211562668
7206		IC, SM SAA5675/HL/M1	935271940557
7207		Transistor, PNP, BC857B(COL)	319801042150
7208		IC, SM PCA9515ADP	935275998118
7210		IC, SM AD9985KSTZ-110	932221506671
7211		IC, Adj. Pos. Volt. Reg., LD11	932213445668
7215		IC, SM M12L16161A-7TG	932216677682
7216		IC, SM M12L16161A-7TG	932216677682
7217		IC, SM M12L16161A-7TG	932216677682
7218		IC, SM M12L16161A-7TG	932216677682
7221		IC, TDA9330H/N3	935268165518
7222		Transistor, PNP, BC857B(COL)	319801042150
7224		Transistor, NPN, BC847B(COL)	319801042030
7225		Transistor, PNP, BC857B(COL)	319801042150
7226		Transistor, FET, BSN20	934012500215
7227		Transistor, FET, BSN20	934012500215
	CD	**CRT Panel -16MHZ**	
CBA	CD	CRT Panel Assy -16MHZ	313918883401
1340	CD	Connector, 5 Pin	242202510428
1351	CD	Connector, 7 Pin	242202511244
1354	CD	SOC CRT V 10P F	242250000004
1361	CD	Connector, 3P M 2.50	242202516382
1381	CD	Connector, 3 Pin	241202000725
2313	CD	Cap, 47u, 20%, 250v, Electrolytic	202001293786
2317	CD	Cap, 4n7, 5%, 1600v, Polypropylene	222237590145
2319	CD	Cap, 10n, +80/-20%, 50v, Ceramic	319801921030
2332	CD	Cap, 4n7, 10%, 50v, Ceramic	319801734720

2333	CD	Cap, 680p, 5%, 25v, Ceramic	319801636810
2335	CD	Cap, 10p, 5%, 50v, Ceramic	319801631090
2336	CD	Cap, 33n, 10%, 16v, Ceramic	319801733330
2337	CD	Cap, 10p, 5%, 50v, Ceramic	319801631090
2338	CD	Cap, 100n, 10%, 250v, Metalized Polyester	202231800109
2339	CD	Cap, 100n, 10%, 250v, Metalized Polyester	202231800109
2340	CD	Cap, 100n, 10%, 250v, Metalized Polyester	202231800109
2341	CD	Cap, 10p, 5%, 50v, Ceramic	319801631090
2343	CD	Cap, 680p, 5%, 25v, Ceramic	319801636810
2344	CD	Cap, 4n7, 10%, 50v, Ceramic	319801734720
2346	CD	Cap, 33n, 10%, 16v, Ceramic	319801733330
2347	CD	Cap, 470u, 20%, 16v, Electrolytic	319802524710
2352	CD	Cap, 4n7, 10%, 50v, Ceramic	319801734720
2353	CD	Cap, 680p, 5%, 25v, Ceramic	319801636810
2356	CD	Cap, 33n, 10%, 16v, Ceramic	319801733330
2357	CD	Res, Zero ohm, "Chip" Jumper	319802190030
2361	CD	Cap, 1n, 10%, 50v, Ceramic	319801731020
2363	CD	Cap, 47u, 20%, 200v, Electrolytic	202001293486
2364	CD	Cap, 470p, 10%, 50v, Ceramic	319801734710
2365	CD	Cap, 470p, 10%, 50v, Ceramic	319801734710
2367	CD	Cap, 100n, 10%, 16v, Ceramic	319801731040
2368	CD	Cap, 100n, 10%, 100v, Metalized Polyester	222236585104
2369	CD	Cap, 330p, 5%, 50v, Ceramic	319801633310
2370	CD	Cap, 100n, 10%, 16v, Ceramic	319801731040
2381	CD	Cap, 47n, 10%, 50v, Polyester	319801404730
2383	CD	Cap, 220p, 5%, 200v, Ceramic	223893011541
2384	CD	Cap, 100n, 10%, 16v, Ceramic	319801731040
2385	CD	Cap, 100n, 10%, 16v, Ceramic	319801731040
2387	CD	Cap, 10n, 10%, 50v, Ceramic	319801731030
2389	CD	Cap, 100n, 10%, 16v, Ceramic	319801731040
2390	CD	Cap, 10u, 20%, 16v, Electrolytic	319802821090
2391	CD	Cap, 100n, 10%, 16v, Ceramic	319801731040
2392	CD	Cap, 4n7, 10%, 50v, Ceramic	319801734720
3305	CD	Res, 1 ohm, 5%, 1/3W, Metal Film	230620403108
3309	CD	Res, 220 ohm, 5%, 1/16W, Metalized Glass	319802132210
3310	CD	Res, 22 ohm, 5%, 1/16W, Metalized Glass	319802132290
3311	CD	Res, 22 ohm, 5%, 1/16W, Metalized Glass	319802132290
3317	CD	Res, 1K, 5%, 1/6W, Carbon Film	319801101020
3325	CD	Res, 1K8, 5%, 1/16W, Metalized Glass	319802131820
3331	CD	Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3332	CD	Res, 1K, 20%, 1/2W, Carbon Film	319801301020
3333	CD	Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3334	CD	Res, 1K, 20%, 1/2W, Carbon Film	319801301020
3335	CD	Res, 100 ohm, 5%, 1/6W, Carbon Film	319801101010
3336	CD	Res, 1K, 20%, 1/2W, Carbon Film	319801301020
3337	CD	Res, 120K, 5%, 1/4W, Carbon Film	212210102074

3338	CD	Res, 2K2, 5%, 1/16W, Metalized Glass	319802132220
3339	CD	Res, 2K7, 5%, 1/16W, Metalized Glass	319802132720
3340	CD	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3341	CD	Res, 120K, 5%, 1/4W, Carbon Film	212210102074
3342	CD	Res, 2K7, 5%, 1/16W, Metalized Glass	319802132720
3343	CD	Res, 2K2, 5%, 1/16W, Metalized Glass	319802132220
3344	CD	Res, 1K, 5%, 1/6W, Carbon Film	319801101020
3345	CD	Res, 33 ohm, 1%, 1/16W Metal Film	319803933090
3347	CD	Res, 1K5, 20%, 1/2W, Carbon Film	319801301520
3350	CD	Res, 6K8, 5%, 1/6W, Carbon Film	319801106820
3351	CD	Res, 150 ohm, 5%, 1/2W, Metal Film	230620703151
3352	CD	Res, 120K, 5%, 1/4W, Carbon Film	212210102074
3353	CD	Res, 2K2, 5%, 1/16W, Metalized Glass	319802132220
3354	CD	Res, 2K7, 5%, 1/16W, Metalized Glass	319802132720
3355	CD	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3357	CD	VDR 0603 1MA/18V MAX 35V	212255200004
3361	CD	Res, 680 ohm, 5%, 1/16W, Metalized Glass	319802136810
3362	CD	Res, 10 ohm, 5%, 1/3W, Metal Film	230620403109
3363	CD	Res, 560 ohm, 5%, 1/16W, Metalized Glass	319802135610
3364	CD	Res, 1R5, 5%, 1/8W, Metalized Glass	232273061158
3365	CD	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3366	CD	Res, 120K, 5%, 1/16W, Metalized Glass	232270260124
3367	CD	Res, 120K, 5%, 1/4W, Carbon Film	212210102074
3368	CD	Res, 560 ohm, 5%, 1/16W, Metalized Glass	319802135610
3369	CD	Res, 150K, 5%, 1/16W, Metalized Glass	319802131540
3370	CD	Res, 1R5, 5%, 1/8W, Metalized Glass	232273061158
3371	CD	Res, 560 ohm, 5%, 1/6W, Carbon Film	319801105610
3372	CD	Res, 150K, 5%, 1/16W, Metalized Glass	319802131540
3373	CD	Res, 1K5, 5%, 5W, Metal Film	232225741152
3374	CD	Res, 10 ohm, 5%, 1/3W, Metal Film	232220533109
3377	CD	Res, 1K8, 5%, 1/16W, Metalized Glass	319802131820
3378	CD	Res, 68 ohm, 5%, 1/16W, Metalized Glass	319802136890
3379	CD	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3380	CD	Res, 33K, 5%, 1/16W, Metalized Glass	319802133330
3381	CD	Res, 18K, 5%, 1/16W, Metalized Glass	319802131830
3382	CD	Res, 8K2, 5%, 1/16W, Metalized Glass	319802138220
3383	CD	Res, 1K, 5%, 1/16W, Metalized Glass	319802131020
3384	CD	Res, 330K, 5%, 1/16W, Metalized Glass	319802133340
3385	CD	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3392	CD	Res, 270 ohm, 5%, 1/16W, Metalized Glass	319802132710
3393	CD	Res, 56ohm, 1%, Metal Film	319803956090
3394	CD	Res, 4K7, 5%, 1/16W, Metalized Glass	319802134720
3396	CD	Res, 1K8, 5%, 1/16W, Metalized Glass	319802131820
3398	CD	Res, 47K, 5%, 1/16W, Metalized Glass	319802134730
3999	CD	Res, 1K2, 5%, 1/16W, Metalized Glass	319802131220
4321	CD	Res, Zero ohm, "Chip" Jumper	319802190030

5303	CD	Coil, 5u6	319801815680
5304	CD	Fixed, Inductor, 100MHz, 50R	319801890010
5308	CD	Coil, 5u6	319801815680
5324	CD	Fixed, Inductor, 100MHz, 50R	319801890010
5361	CD	Fixed, Inductor, 100MHz, 80 ohm	319801890020
5362	CD	Coil, 1u	319801831080
6307	CD	Zener Diode, 6.8 volt	319802056880
6325	CD	Zener Diode, 2.7 volt	319801022780
6331	CD	Diode, BAV21WS	932219745703
6332	CD	Diode, BAV21WS	932219745703
6333	CD	Diode, BAV21WS	932219745703
6334	CD	Zener Diode, 3.3 volt	319802053380
6362	CD	Diode, Signal, BAS316	319801010630
7330	CD	IC, TDA6111Q/N4	935173950112
7331	CD	Transistor, NPN, BC847B(COL)	319801042030
7332	CD	Transistor, PNP, BC327	933179540126
7333	CD	Transistor, NPN, BC337	933179600126
7340	CD	IC, TDA6111Q/N4	935173950112
7350	CD	IC, TDA6111Q/N4	935173950112
7361	CD	Transistor, NPN, BF840	933792670215
7362	CD	Transistor, PNP, BF824	933722350215
7363	CD	Transistor, KTB631KY	932219505687
7364	CD	Transistor, KTD600KY	932219514687
7365	CD	Transistor, NPN, BF840	933792670215
7366	CD	IC, TDA8941P/N1	935262851112

5217	ABC	IND FXD 0805 EMI 100MHZ 220R R	242254944197
6200	ABC	Diode, Rect, SS34	932208282668
6201	ABC	Diode, Rect, SS34	932208282668
6222	ABC	Zener Diode, 8.2V	319802058280
6223	ABC	Diode, Signal, BAS316	319801010630
6224	ABC	Zener Diode, 4.7V	319802054780
6225	ABC	Diode, Signal, BAS316	319801010630
6226	ABC	Diode, Signal, BAV99	319801010620
6227	ABC	Zener Diode, 12V	319802051290
6228	ABC	Zener Diode, 33V	319802053390
6229	ABC	Diode, Signal, BAS316	319801010630
6230	ABC	Diode, Signal, BAS316	319801010630
6231	ABC	Diode, Signal, BAS316	319801010630
7201	ABC	IC SM DPTVSVP (TRDI) Y	932220905671
7202	ABC	Transistor, PNP, BC857B	319801042150
7205	BC	IC SM BA7657F (RHM0) R	932211562668
7206	ABC	IC SM SAA5675/HL/M1 (PHSE) Y	935271940557
7207	ABC	Transistor, PNP, BC857B	319801042150
7208	ABC	IC SM PCA9515ADP (PHSE) R	935275998118
7210	ABC	IC SM AD9985KSTZ-110 (ANA0) Y	932221506671
7211	ABC	IC, Adj. Pos. Volt. Reg., LD11	932213445668
7215	ABC	IC SM M12L16161A-7TG (ESMT) L	932216677682
7216	ABC	IC SM M12L16161A-7TG (ESMT) L	932216677682
7217	ABC	IC SM M12L16161A-7TG (ESMT) L	932216677682
7218	ABC	IC SM M12L16161A-7TG (ESMT) L	932216677682
7221	ABC	IC, TDA9330H/N3	935268165518
7222	ABC	Transistor, PNP, BC857B	319801042150
7224	ABC	Transistor, NPN, BC847B	319801042030
7225	ABC	Transistor, PNP, BC857B	319801042150
7226	ABC	FET POW SM BSN20 (PHSE) R	934012500215
7227	ABC	FET POW SM BSN20 (PHSE) R	934012500215
8202	A	CBLE PH 5P/400/5P PH BRA FERR	313913105301
8202	BC	CBLE PH 5P/400/5P PH BRA FERR	313913105731
8206	ABC	CBLE PH 04P/120/04P PH FERR	313913105991
8220	BC	CBLE PH 07P/280/07P PH BRA FER	313913105501
8221	BC	CBLE PH 06P/340/06P PH 26ST BK	310415704201
8222	BC	CBLE PH BK 06P/280/06P PH BK	313913105411
8223	BC	CWAS 04PH/04PH 280 4 BK 26S	313911026211
8228	ABC	CBLE PH 6P/200/6P PH BRA FERR	313913105401
8278	A	HR BK 4P/1000+340/2X2FAST	313913101262
8533	ABC	CBLE PH 12P/220/12P PH INS	313913105221

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- Missing block diagrams added and Table Of Contents updated.